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There and then . . . the assembly line was born

EARLY in 1913, Henry Ford had his technicians try a new production idea which had come to him as he observed a watch factory in operation. Instead of having a single group of men make the entire assembly on each flywheel magneto, the unit was moved from one worker to another. The result was a 50% saving in time!

"Why not test this idea on the whole chassis?" Mr. Ford next suggested. So now, along elevated greased rails, each chassis was being pushed by hand as workers added the various parts in sequence. *There and then, the assembly line was born!*

A chain-driven line was soon after put into operation. Under the new

system, the 14 hours formerly required for a single chassis assembly were cut to 1 hour and 33 minutes.

Before 1913 was over, more than 100,000 Ford cars had been built. All records for the mass production of automobiles had been broken.

Remarkable as this achievement was, it meant more than just a saving in production time, more than creating new methods for industry everywhere. To Mr. Ford and his associates, this was another step in their endeavor to make life easier for millions.

From the first, the assembly line technique of production eased working conditions. Along with other modern advances, it helped to increase

the life span of workers. At Ford, it soon made possible the 8-hour day. And with unskilled labor in many places earning as little as \$1 a day, Ford basic pay was raised to \$5.

The assembly line also brought price reductions on Ford cars. This placed the pleasure and convenience of the motor car within the reach of more people. This policy of sharing production savings with the public has remained fundamental with Ford.

Today, in the creation of equipment vital to victory, Ford men continue to search for better ways of doing things. What they are learning will be reflected in the improved Ford transportation of tomorrow.

FORD MOTOR COMPANY



How to control **PRE-HARVEST DROP** with "Parmone" hormone treatment



"**PARMONE**" reduces pre-harvest drop of apples and pears—gives *better* fruit, *more* profit—by retarding dissolution of the abscission layer between the fruit stem and the spur (see broken line in illustration).

"Parmone" penetrates the stems and within 1 to 3 days prevents those chemical changes which cause breakdown of cell walls and separation of fruit from the tree. The effect may last as long as 1 to 3 weeks. Certain varieties may require two applications, depending on weather conditions, tree vigor, etc.

For best results, application should be delayed until the beginning of fruit drop—but not *too* long. Harvest dates are a valuable guide in timing the application of "Parmone." Growers may secure "timing" assistance from their local agricultural authorities.

"Parmone" neither accelerates nor arrests ripening. The treatment merely gives protection against excessive dropping during the normal harvesting period.

PLAN NOW TO PROTECT YOUR FRUIT CROP!

HERE'S WHAT "PARMONE" DOES FOR YOU

- Reduces pre-harvest drop and cull losses.
- Permits development of better color, size and quality.
- Lessens droppage caused by untimely winds or jarring.
- Cuts down spot picking.



Better Things for Better Living
... Through Chemistry

U.S.D.A. estimates that hormone treatment of apple and pear crops is saving fruit growers \$3,000,000 to \$4,000,000 a year. For your share of this protection, use "Parmone"—Du Pont's effective hormone spray. There is no weighing problem with "Parmone." It is concentrated and mixes readily in the tank with normal agitation.

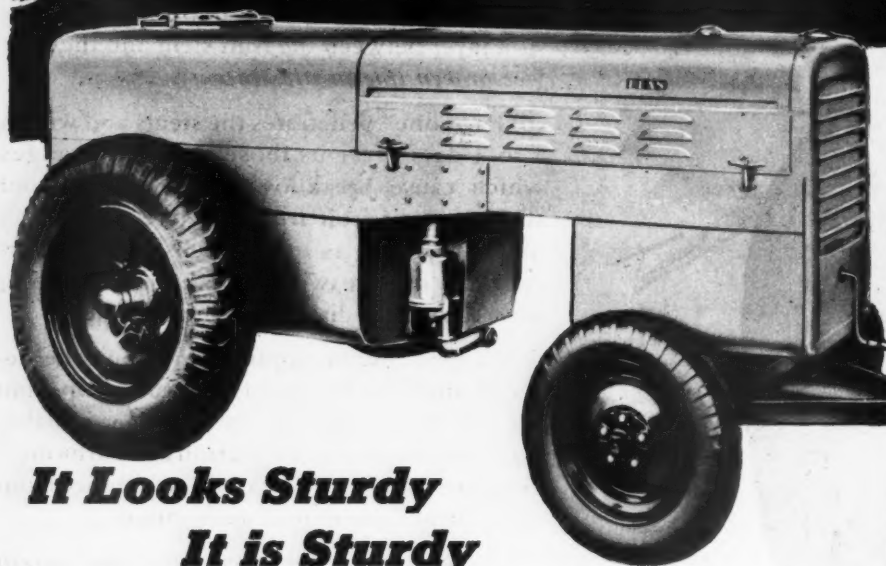
"Parmone" is available as a dust, too

For certain fruit-growing regions where dusting is more practical than spraying, Du Pont has developed "Parmone" Dust. It is comparable in cost and effectiveness to the Spray.

Order your supply of "Parmone" now. Meanwhile, write for the interesting "Parmone" folder. E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Department, Wilmington 98, Delaware.

DU PONT PARMONE
HORMONE SPRAY or DUST

Only BEAN provides BEAN Performance



**It Looks Sturdy
It is Sturdy**

Wartime spray schedules have put the spotlight on sprayer endurance . . . and the BEAN has been making history. From the apple orchards of the Northwest to the citrus groves of Florida it has been in the thick of the fight for big-volume top-quality production.

Even the oldest outfits . . . sprayers that have been on the job for years and years . . . have been breaking records for long hard spray runs with little trouble and minimum cost.

There are more BEAN Sprayers at work in the fields, groves, and orchards of the country today than any other make. We're proud of that fact. We salute the growers who are wielding the nozzles for Victory production. And we are doing our best to supply new outfits where they are needed most and to give good service through authorized BEAN Dealers on old ones where and when service-attention is required.

JOHN BEAN MFG. CO.

Division of Food Machinery Corporation

15 HOSMER STREET • LANSING, MICHIGAN

104 WEST JULIAN STREET • SAN JOSE, CALIFORNIA



**FMC Fog Fire Fighter
(BEAN-Built)**

A fast-moving, self-contained fire fighting machine that operates at 800 lbs. pressure.

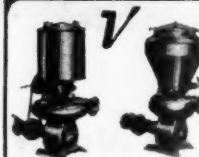
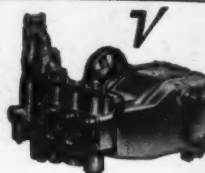


BEAN 'Royal' Tractor Power Sprayer... Built in sizes to meet all requirements.



BEAN 'Little Giant' Duplex Sprayer. Seven gallons a min. at 400 lbs. Two-cyl. pump.

BEAN 'Royal' Pump. Simplest, sturdiest, most efficient spray pump on the market. Built in all sizes.



BEAN Orchard Duster. Mixes its own dust... Most efficient duster made. One compact gear unit.

BEAN All Purpose Little Giant Duplex tractor take-off sprayer. 6-7 gals. at 400 lbs. pressure.



BEAN 'Royal' Motor Truck Sprayers. Capacities 20-60 gals. at super high pressures.

BEAN 2-Way Fruit Cleaner. A dry cleaner which leaves fruit clean and bright.

... 3 sizes.



BEAN Rubber-Spool Grader for potatoes & onions. Also cleans. Small, light, compact.

MORE PROOF!

FMC HIGH-PRESSURE FOG EFFECTIVELY SMOTHERS FLAME

Kent County, Michigan, Fire Department Makes Remarkable Record

201 FIRE RUNS—PROPERTY SAVED, \$226,985.00

The first report of the Kent County Fire Department shows how good the FMC Fog Fire Fighter really is. And—it proves that a rural, volunteer fire organization can be operated on an efficient basis.

The Kent County organization was established by a special act of the Legislature and organized with the help of Extension Service. Surveys were made. Meetings were held. And hundreds of volunteer firemen responded.

Then—five FMC High-Pressure Fog Fire Fighters were purchased from the John Bean Mfg. Co.

Look at the Record! 201 Rural Runs! Property on

Fire Saved—\$226,985! Total losses 'way below rural average—only 11!

FIGHT YOUR FIRES THIS MODERN WAY

Fires can be put out faster and with less water with FMC High-Pressure Fog. Why? Because the high pressure gives you a combination of finely-atomized water and high velocity—just what you need to *blast, cool and smother* flame. Investigate! Get the facts about this new and revolutionary fire-fighting technique. Right now—the Armed Forces are taking most of the production of FMC High-Pressure Fog Fire Fighters. But—you should be ready to modernize the moment civilian needs can be met. Start planning—now!

This farm house is typical of the rural structures to be found in Kent County. Many are located far away from adequate water supplies—far away from Low-Pressure Pumps. As the FMC High-Pressure Fog Fire Fighter travels fast and carries its own water supply, it knocks down a fire in a very few minutes.



STANDARD FMC FOG FIRE FIGHTER. A self-contained fire-fighting unit. Carries its own water supply and complete fire-fighting equipment.

FMC

Original

HIGH-PRESSURE FOG FIRE FIGHTER

CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

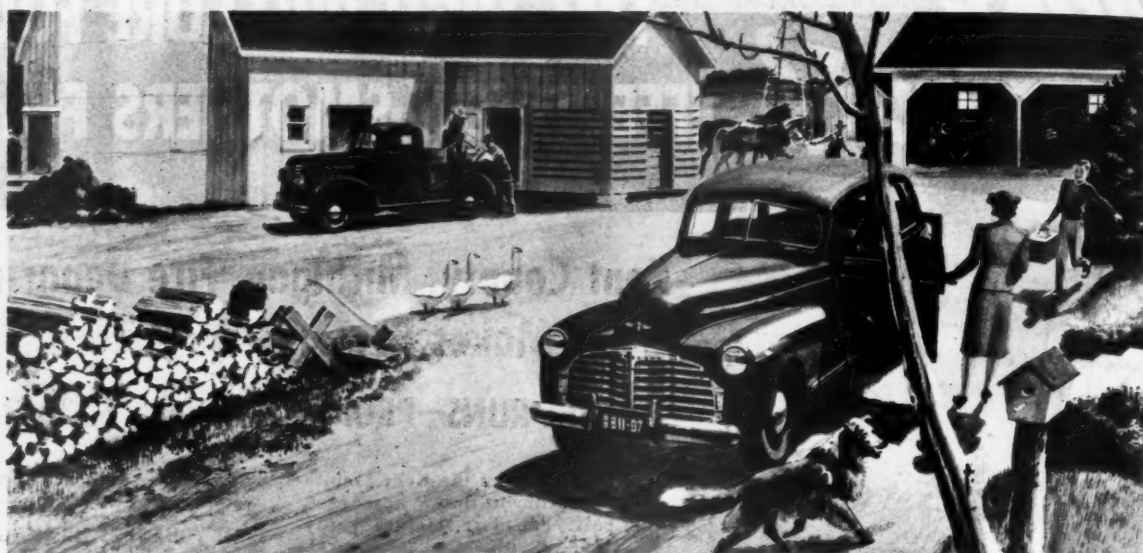
FOOD MACHINERY CORPORATION

JOHN BEAN MFG. CO., 703 HAZEL ST., LANSING 4, MICH.

BEAN-CUTLER DIVISION, 403 JULIAN ST., SAN JOSE, CALIF.

BUILDERS OF BEAN HIGH-PRESSURE PUMPS FOR OVER 60 YEARS

IT TAKES MANY KINDS OF "GOOD SOLDIERS" TO WIN THIS WAR FOR FREEDOM



AMERICA'S FARMERS ARE FIGHTING THE GOOD FIGHT

... and Chevrolet cars and trucks are helping them to win the battle of food production

ALL of America's pride, admiration—and thanks—go out to the gallant members of our armed forces who are fighting America's war for freedom in all parts of the world.

But our armed forces want more than thanks. . . . They want wholehearted support from all of us here at home. . . . And they would be the first to admit they are getting that support in full measure from America's farmers.

Last year America's farmers produced the greatest volume of food *ever* produced in the entire history of this nation—to take care of the hungry millions here at home, to feed our fighting men and to supply lend-lease.

This year they are exerting every effort to *produce even more food* for this warring world, despite all the difficulties and discouragements attendant upon inadequate farm labor—worn-out equipment—long hours of back-break-

ing toil—and the unpredictable whims of nature herself.

Transportation is, of course, one of the farmer's main needs. . . . His car and truck are among the most *essential* items of equipment he has. . . . In thousands upon thousands of cases, they form his *sole* means of transportation to market.

We of Chevrolet are proud to be helping America's farmers to win the battle of food production and distribution . . . by supplying dependable, economical transportation for *more farmers* than does any other manufacturer of cars and trucks . . . and by assisting them to keep their vital motor vehicles alive and running, through the medium of Chevrolet dealer service.

It is a privilege to serve all of America's leaders who serve for Victory; and, most certainly, America's farmers rank high on that list.

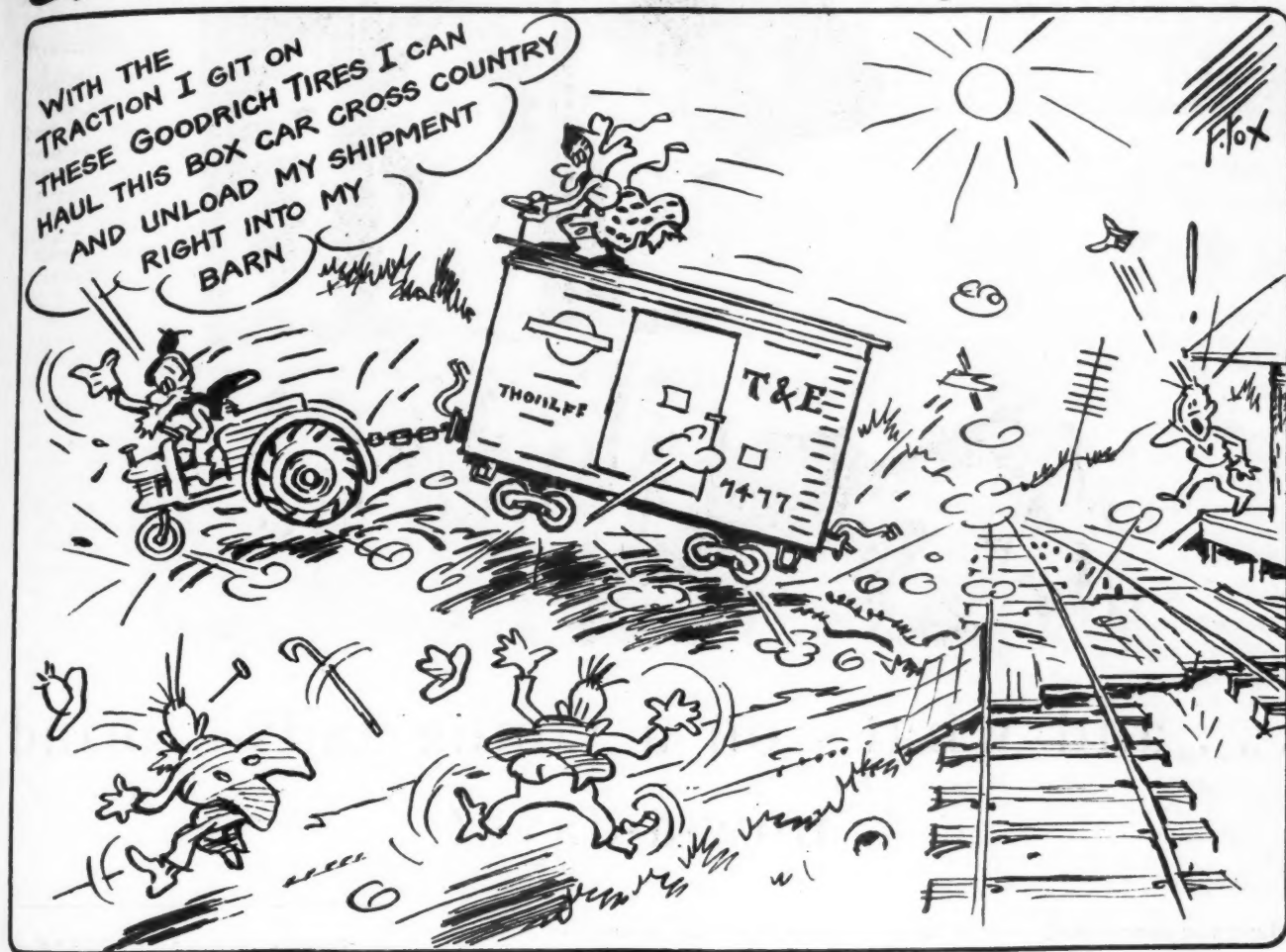
CHEVROLET MOTOR DIVISION, *General Motors Corporation*, DETROIT 2, MICHIGAN

CHEVROLET

TODAY — THE LEADER SERVES ALL LEADERS WHO SERVE FOR VICTORY

SPEAKING OF TRACTION

—by Fontaine Fox



Things to look for when you buy tractor tires

HERE'S a way to be sure you are getting the kind of traction you want when you buy tractor tires. Take a look at different makes of tires in operation. Compare the action of the tires in the soil carefully.

Note particularly the following points and see if you don't agree that B. F. Goodrich Silvertowns give you the traction you need for every type of farming operation.

Watch the Bite: the extra-high cleats and the open-center design of the Silvertown give a deeper bite. You get good traction in mud or clay—even on cover crops.

Watch the Grip: paired cleats of the Silvertown give double grip. Extra-heavy shoulders provide maximum pull. Tire clings to hillsides.

Watch for Self-Cleaning: the tread design is open—no mud-catching pockets. And because it's

open, it's flexible—the cleats spring the dirt free with a slingshot action.

This simple comparison test will help you make up your mind as to which tires will do the best job on your farm. If you like, the local B. F. Goodrich dealer will be glad to arrange this test for you.

Today synthetic rubber is used in varying quantities in making all tractor tires. B. F. Goodrich first made tractor tires of synthetic rubber more than two years ago—made and sold passenger car tires containing more than 50% synthetic rubber almost four years ago, the first containing any synthetic rubber ever sold to American car owners. This head start has given B. F. Goodrich a big advantage in building quality products of synthetic rubber.

For tires for your tractor or implements, car or truck, see the B. F. Goodrich dealer or Silvertown Store.





... and what's on a young lady's mind now-a-days?

Have you ever looked at your farm through the eyes of your daughter—the way she sees it when she is alone? True, she probably doesn't know all the ins and outs of its operation—but she knows a lot about what it is doing to you.

She sees what becomes of the companionship the whole family is hungry for when evening after evening you are too tired to do anything but eat.

Her picture of farming as a way of life comes pretty close to being accurate. It comes from what she learns from you—not from what you say, but from how you do what you do.



If you do your farm work the tiring, back-breaking way, it's possible the impression of farming you give your family is not

quite what you would like it to be.

But, if you are using modern equipment—the Ford Tractor with Ferguson System and Ferguson Implements—all the backbreaking labor is taken out of farming.

It's a lot easier to be an understanding father and a good companion to your family when you are not tired out. And it's a lot easier to give your children the impression of farming you want them to have now, while they are young, than it will be later on.

The future of America's agriculture is safest in the hands of boys and girls born and raised on the farm—especially those who have learned to love it for all the rich satisfaction there is in living on the soil and making things grow.

What your daughter sees in the way you farm is mighty important—why not talk it over with her?

TAKES THE BACK-BREAK OUT OF FARMING

The Ford Tractor with Ferguson System substitutes automatic muscles of steel, controlled by a mechanical brain, for your back and arms in doing the hard work of power farming.

Setting and controlling the depth at which ground tools operate become a machine's work instead of a muscle-straining, knuckle-skinning job. Changing from one implement to another is as easy as dropping a peg in a latch—no muscle work there, either.

Save your strength to do a better job of farming and to get more enjoyment out of life.

Ask your local Ferguson Dealer to arrange a demonstration of this modern farming machine for you.



The only Tractor that Automatically Changes its 'Weight' to Suit the Job.

HARRY FERGUSON, INC. • Dearborn, Michigan

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LETTERS TO THE EDITOR

Avocados That Won't Set

Dear Dr. Magness:

Your article on fruit setting in the May issue of *American Fruit Grower* is of interest to me, although I realize that it is intended for deciduous growers under Eastern conditions.

Here, we find difficulty in getting avocados to set, although the trees are in excellent condition and sometimes carry a succession of profuse bloom from November to July. Oranges under the same conditions set fruit regularly where bloom occurs.

Considering the unfavorable conditions set out in your article—none are present on my small property. No frost, but considerable cool foggy weather part of many days, but bees plentiful and very active during afternoon. No hot weather, no spray injury, no devitalized blossoms. The trees are in fine shape and making heavy leaf growth.

It seems to have been proven that cross-pollination is not necessary between varieties. The commercial growing of avocados is relatively new, and it seems that many individual trees are from unproductive stock. This, of course, we usually remedy by grafting to known stock of good bearing.

Our folks here have found out little about the matter, so it may be that some of the information gathered by the deciduous growers in older orchards may be helpful to the avocado growers. Many thanks for any suggestions.

Box 164, Vista, Calif.

J. S. Kelly

Dr. Magness has written personally to avocado grower Kelly.—Editor.

A Letter From England

Dear Sirs:

Under war conditions fruit growing has been anything but an easy job. But in spite of all the difficulties, the British fruit grower has carried on.

Thanks to the co-operation of the War Agricultural Executive Committees set up by the Ministry of Agriculture, every assistance has been given to enable fruit growers to obtain good crops at a minimum amount of trouble. For example, land that required a tractor plough or fruit trees that required spraying—growers have been able to get this work done in fairly reasonable time by applying to their local executive officer.

Of course those growers who were in peace-time slothful workers have had to toe the line, and bring their orchards into a proper state of cultivation.

Then again, taking so many men for the forces has played havoc with fruit growers at harvest time, and many tons of fruit have been allowed to decay for want of pickers and for lack of transport at the right time. The trouble in this case has been that there is so very little woman labor available. Naturally, women can make far more money making munitions, although many amateur pickers are making as much as five pounds per day.

Many fruit growers have overcome this difficulty by inviting families of townspeople to come and spend their holidays in their orchards. Good accommodations are found for them. The Ministry of Agriculture has set up labor camps all over the country and these have answered very well. Youth clubs and public school

boys have been very useful not only to fruit growers, but to farmers generally.

I would also like to give a word of praise to the American boys over here. They enjoy British village life A-1 and are always grateful for any kindness given them by helping on the farms or in the orchards and, my word, they can work too. Strawberry growers have been the hardest hit, having had to plough in 75 per cent of their plants.

Workshop Notts, England

G. Barton F.R.H.S.

Thanks for an up-to-the-minute comment on British fruit growing problems.—Ed.

Building Cold Storage

Gentlemen:

We are interested in putting up a cold storage and packing house to take care of at least 25,000 bushels of apples.

We would appreciate whatever information you can give us regarding this.

H. Koplin

Empire, Mich.

Zephyr Orchards

Grower Koplin has been sent an issue of the *AMERICAN FRUIT GROWER* which carries blueprints and detailed information for building any size cold storage.—Ed.

Cherry Time

Dear Sirs:

I wonder if you would give me information on ways and means of keeping birds out of cherry trees. I believe in the past the *AMERICAN FRUIT GROWER* has had ads pertaining to such troubles.

Leominster, Mass

Owen E. Willard

The Salt Lake Stamp Co. of 43 West Broadway, Salt Lake City, Utah, advertises an automatic exploder to frighten away birds. Growers with only a few trees sometimes wrap them in cheesecloth. Has any reader a better solution.—Ed.

Elberta it is

Dear Sirs:

Why advertise Canadian peaches on the front cover? Or is the "Alberta" a new variety?

I grade my students down if they write Alberta when they mean Elberta.

Horticultural "slips" have to be carefully handled to get new rooted plants.

Storrs, Conn.

S. P. Hollister

Dear Sirs:

We have been telling our grocers there is no "Alberta" peach, but since your June number came, we are wondering if they may not have been right.

N.D. State College Station C. B. Waldron

Gentlemen:

The copy of the June issue has come to my desk.

I suppose your attention has already been brought to the misspelling of the world "Elberta." Some confusion has previously existed because of such a misspelling of the name as to the source of origin of this peach. Persons not infrequently did ask me whether the peach did not originate in Alberta, Canada. This does not please citizens of Georgia.

N.J. Experiment Station M. A. Blake

A careless proofreader made this great horticultural discovery. Never again will we render unto Alberta the peach that is Georgia's.—Ed.

Next time-
get "FRIEND"
DEPENDABILITY



SPRAYERS

Buy yourself the most dependable sprayer built, with the pump that has only 1/2 to 1/3 as many moving parts.

You'll never spray with a leaky pump; the "Friend" packing is instantly adjusted. Valves are instantly removable for cleaning—they are outside, easy to get at, and have threadless seats.

You make sure of up-to-the-minute design by buying a "Friend." Here are some of the important sprayer improvements originated by Friend: Lubrication of all working parts, including plungers... One-Piece Steel Frame... the first Spray Gun... short-turning Cutunder Mounting... and many more "firsts." Friend leads the way in sprayer design.



DUSTERS

Friend builds a complete line of dusters, three different types. The heavy-duty "Friend" Unifeed is the most economical machine for a grower with large acreage. Also low-cost utility models, for orchard and row crops.



SIZERS and CLEANERS

—as dependable as "Friend" Sprayers. From commercial sizing equipment to small growers' models. For apples, peaches and pears. No other sizers give the fruit such gentle handling.

FRIEND MANUFACTURING CO.
GASPORT, N. Y.

Easiest to Maintain
in Working Order--

Fewest Moving Parts

"FRIEND"

LOOKING AHEAD IN FRUIT BREEDING

Two Leading Horticulturists Tell of Wide Progress

MOST fruit varieties do not quite fit their environment. We spend our time as fruit growers trying to change the environment to fit the plant. The plant breeder's objective is to change the plant to fit its environment.

It is natural for the most work to be done where the need is obvious. A would-be apple grower who plants Delicious and Winesap in North Dakota soon learns that they are not rugged enough to withstand conditions even with special care. He then finds that with extra care Hibernial can survive, but it fails to meet the test of quality, and that the Siberian Crab Apple will prosper, but has fruit the size of beans. The natural attack in this obvious situation is to try to develop apples as good as Delicious on trees as hardy as Siberian Crab. Such a program was started in Canada by Dr. Saunders, carried along by Dr. Macoun, who became Dominion Horticulturist in 1910, and, since his passing, it is being continued by Davis, Leslie and others.

Apple breeding is a long time project. From crosses to bearing trees may take 20 years. Selection and more crosses follow so that an apple program involving three generations may take 60 to 75 years as compared to one year for three tomato generations. More than that, the hereditary make-up of the apple is infinitely more complex so that definite breeding plans are less sure of success. Nevertheless, apples have already moved north hundreds of miles. Dr. Saunders' dream apple may even now exist as an unrecognized inhabitant of some breeding orchard. If not, it will come eventually. So much for the winter hardiness battle.

Other apple developments may be expected to include: resistance to such diseases as scab, blotch, and rust; late blooming varieties that will escape spring frosts; improvements in handling methods. If the juice business continues to grow, we may see varieties especially developed for juice. There will be breeding and selection of apples to be used as stocks, thus controlling the fruiting and size of trees, insuring greater winter root and trunk hardiness, resistance to wooly aphids, and compatibility between roots and tops.

New England Angle

By A. F. YEAGER
University of New Hampshire

Considering that modern scientific breeding is only 40 years old, we have come a long way. With the well planned work under way at such places as the Canadian stations, and stations of Minnesota, Iowa, New York, Ohio, Missouri, Idaho, Illinois, South Dakota and others, there is good reason for apple growers to keep an eye on the plant breeder and to be optimistic of the future.

The pear situation is similar to that of the apple. Much of the eastern United States grows only the Keiffer variety because of the severity of fire blight damage to the others. Certainly we can and will develop better blight resistant varieties. As with apples, new plant introductions have changed the possible northern range of pears by hundreds of miles. At one time southern Minnesota was considered out of bounds for pears and now hopeful home fruit growers are planting new varieties on the shores of Lake Winneteg. These are not exactly Bartletts, but they are the scouts, leading the pear army into the northlands.

Apricots, through much the same process, have sent out skirmish lines advancing from Nebraska into Saskatchewan within the last 20 years. If someone discovers a late blooming apricot, and who can say they will not, the whole area where late spring frosts now preclude its practicable culture will rejoice.

Plums, because of much work and the rapid development of the plants from seed to fruit bearing, have already conquered the North. We need now to evaluate those we already have and perhaps develop more varieties of the European type. Such are already on the way.

Peaches have developed comparatively little in the last hundred years as evidenced by the continued popularity of Elberta. We have, as plant breeders, been mostly reworking the old prospects. Much of the country still gets one crop in three years. If only we could produce peaches resistant to 5 more degrees of cold, what a difference it would make! Perhaps the new plant introductions

from the North Caucasus region of Russia may do just that. If so, look out for developments on the peach front.

Sweet and sour cherries, until we discover some new breeding material, probably will not change much, but their relatives such as Nanking and Korean, which pass for cherries, are likely to become popular with the home gardener who wishes his fruit to grow on bushes. Another fruit in this class, the Sand Cherry, has been so extensively used that its place in fruit breeding may have been pretty well outlined. There are still possibilities in it which must not be overlooked. During the past 30 years its hybrids have almost revolutionized fruit growing in the drier, colder parts of the country. Higher quality in this group may be expected.

Grapes have been pretty well worked out within the range of *Vitis labrusca*, but there still is much to be secured from hardier native grapes and the European types. While we now have seedless varieties as hardy as Concord, little more can be said for them. Doubtless, high quality, seedless varieties will come.

The raspberry seems to be moving south rather than north. There is probably little prospect for hardier varieties. Better quality and more disease resistance are the improvements in store for the northern growers. The introduction of new species of *rubus* has already resulted in some new varieties, better adapted for the South. With these leading the way there seems to be good prospects that raspberries offering more success in the warm sections are in the cards.

Blackberries and dewberries are still largely undeveloped. What the future holds is hard to say. Thornless canes is one of the good prospects. Perhaps, in this group chromosome doubling by colchicine offers possibilities. With the diversity of species involved there may be development of important north, south, and in between varieties.

In strawberries the introduction of the red steele disease may make it necessary to re-evaluate all our varieties. Certainly resistance to red steele is one of the important considerations. Varieties possessing

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this characteristic already exist and more are being developed. Strawberries of good size and quality, adapted to alkaline soil with greater ability to stand cold and drouth, will also likely appear. Later ripening productive sorts to prolong the season is a breeding objective which may or may not be realized.

Blueberries are rapidly reaching first importance in the fruit picture. With all the work being done on them from south to north, involving many species, we may confidentially expect varieties ranging from 6 inches to 10 feet tall, adapted to domestication. They will vary in fruit size and flavor to suit all tastes. They may also vary in their soil and moisture requirements so that successful culture will be possible where they are now unknown.

The picture, as a whole, is one of movement and progress. It behooves a progressive fruit grower to keep informed not only on the varieties adapted to his own use, but also about those bred for the use of others whose product may compete with him. Certainly where competition becomes keen in the most favored sections, the grower there will become interested in the fruit breeding if he is not now. It is a potent means of overcoming difficulties.



Dr. Liberty Hyde Bailey, one of America's most famous and beloved horticulturists, has observed the progress of the fruit industry for almost three-quarters of a century.

FARM scientists are also doing some post-war planning, even though their present efforts are focused chiefly on problems of the food supply and directly connected with the war. Much research work, particularly agricultural research, must be projected far into the future by the very nature of the things with which the scientist works—plants and animals and the soil. But nowhere is the long look ahead more essential in the planning of research than in the breeding of plants, especially tree fruits which require many years of testing under a wide range of soil and climatic conditions before the fruit breeder can say, "Here is a new variety worth trying."

Peaches of earlier and later maturity than those now grown and all with hardy buds, a really good late winter apple, bigger and better sweet cherries that will not crack, improved plums that will enable the East to recapture some of its lost prestige as a source of good plums, seedless grapes of the "California type" hardy enough to withstand the winters of the Northeast, red raspberries resistant to mosaic infection and which produce both a sum-

The Geneva Viewpoint

By J. D. LUCKETT

New York Experiment Station

mer and a fall crop of fruit—these are just a few of the things that the fruit breeders dream about for the future.

For more than sixty years, the New York State Experiment Station at Geneva has had as one of its major lines of work the breeding of new varieties of the hardy fruits. Literally thousands of seedlings have been grown from innumerable crosses—17,577 apple seedlings, 9,102 pears, 1,691 cherries, 39,715 grapes, 24,665 raspberries, 28,744 strawberries, and so on.

But the number of seedlings found worthy of second test may seem surprisingly small to one unfamiliar with the genetics of plant breeding. Truly this is a case where "many are called, but few are chosen," for a ratio of one promising seedling in a thousand is a reasonable expectation. Here is the record at Geneva from the beginning of the fruit breeding work to the present. Thirty-eight apple seedlings have been named, and of these 20 are still being offered for trial as showing

promise. Similarly, 12 pears have been named and 10 are still on trial; 4 cherries named and 3 still available; 31 grapes named and 24 offered for trial at the present time; 24 raspberries named to date—red, black, and purple—of which 11 still survive for further testing; and of 22 strawberries named during the years, only 5 have withstood the terrific competition every new introduction must meet.

It goes without saying that in the course of fifty or sixty years the scientists have accumulated a vast amount of information about "blood lines" in fruits. This has enabled them to concentrate on the more promising "families" among the different fruits rather than to utilize time, labor and land in an indiscriminate crossing of varieties. Among strawberries, for example, the Howard is rated as tops for breeding purposes, according to Professor George L. Slate, in charge of the small fruit breeding program at Geneva. In a 7-year period, nine crosses were made with Howard as one of the parents and of the 1,692 seedlings obtained, 49 showed sufficient promise to merit further testing. No other parent variety has done so well, says Professor Slate.

(Continued on page 12)

LOOKING AHEAD IN FRUIT BREEDING

(Continued from page 11)

In a similar way the Lloyd George red raspberry has proved outstanding in transmitting its mosaic-resisting qualities to its seedlings. Among apples the McIntosh family imparts quality; with pears, the Bartlett family predominates; with grapes, it is the vinifera or European type with its high quality that is most desired; and so on until with each of the fruits the list of parent varieties is narrowed down to a few strains or types which are known for their ability to transmit certain highly desirable characteristics to their offspring.

Take red raspberries, for example. Professor Slate states that the red raspberry of the future must combine all of the best qualities of the leading varieties of today with resistance to infection from raspberry mosaic and with the ability to produce both a summer and a fall crop of prime fruit. Marcy, Indian Summer, and Milton have demonstrated their ability to resist mosaic, and Indian Summer produces a summer and fall crop and is far superior to any of the commonly grown "ever-bearing" raspberries. But Indian Summer has shortcomings as a commercial variety, hence its value is going to be primarily as a parent in crosses with other sorts which possess the desired characteristics of a good commercial red raspberry.

Commenting on the tree fruits, Professor Richard Wellington states that in peaches, hardiness is an absolute essential if a new peach is to make its way in the Northeast. Of course there are other things that the fruit breeders want in a new peach. For one thing, they would like to improve upon the quality of Elberta, the standard commercial variety of the East. They also want to extend the season for peaches by developing both earlier and later maturing sorts

—always keeping in mind the essential requirements of commercial production and distribution.

When it comes to apples, Professor Wellington believes that a really good late winter apple is most in demand. Some good winter apples of the McIntosh type, such as Kendall and Macoun, have come out of the fruit breeding program at Geneva, but the search is still underway for a variety superior to anything yet available that will take the place of say, Baldwin. Of course there is a place for apples of other types and seasons, but viewing the scene again from the standpoint of commercial apple growing, the main objective is still a truly superior late winter apple.

With pears, the fruit breeders are looking primarily for earlier and later Bartlett types, and of course all new pears must demonstrate beyond question their resistance to blight. With cherries, the search is directed chiefly to early sweet varieties, although it has proved so difficult to breed new cherries that the field for improvement in this fruit is wide open.

In many ways grape varieties are undergoing one of the most interesting evolutions of our time. Here, high quality is pre-eminent in the vinifera or so-called European grapes and hardiness in our native grapes. Many combinations of the two have been made, and a large number of superior seedlings have been obtained, but none have quite met all the requirements for commercial grape growing. That is, nothing yet has come along to replace the Concord, for example, or the Niagara or the Catawba, although some of the varieties developed by Professor Wellington and his associates, such as Fredonia,

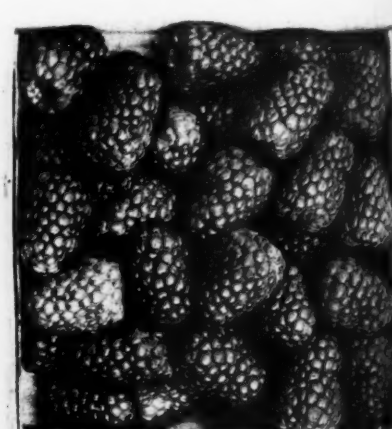
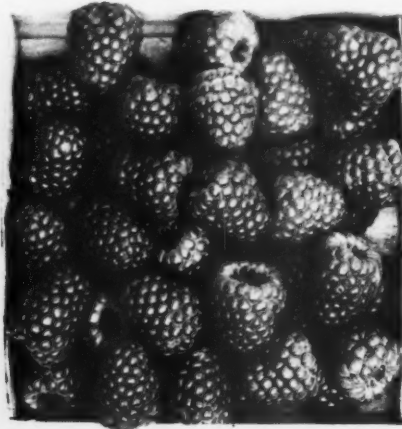
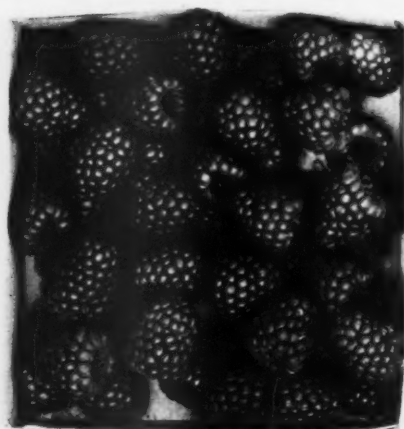
Golden Muscat, Sheridan, and others, are being grown in increasingly larger quantities.

Then the idea of seedlessness has come into grape breeding, with the result that at Geneva there are now a number of truly high-quality seedless seedlings of almost pure vinifera blood that actually surpass anything in the way of popular "California type" of grape with their tight skin and fleshy pulp, but, unfortunately, most of them are seriously deficient in hardiness. By special precautions, wholly impractical from the standpoint of the commercial grower, the vines can be carried over winter in New York State. These seedless grapes do show what can be done by breeding, however, and the fact that they lack hardiness in no way discourages the fruit breeder, but quite to the contrary stimulates him to still greater efforts to develop a hardy seedless vinifera grape that can be grown commercially in New York and the Northeast. When that day arrives, California will have to look to her laurels.

Under the best of circumstances, the breeding of new varieties of fruit is a time-consuming and painstaking task. In fact, we shall never attain the "perfect fruit." An eminent British scientist has pictured the world a thousand years hence as inhabited by a race which will find its chief diversion in the breeding of new plants, including fruits. The post-war plans of the fruit breeders at the Experiment Station at Geneva are not projected quite that far into the future, but they do include many choice things for the orchards, vineyards, and small fruit plantings that will be set out in the years of peace to which we all look forward with such eagerness and hope.

Page 12 AMERICAN FRUIT GROWER, JULY, 1944

Comparative samples of Cuthbert, left; new Washington, center; and Lloyd George red raspberry varieties.



DISEASES OF APPLES

By ROBERT H. DAINES

New Jersey Experiment Station

ALL portions of the apple tree are subject to injuries from a wide variety of diseases. Some are commonly observed in the orchard, while others occur during the storage or post-storage period. Some are produced by fungi, while others occur as the result of bacterial or virus invasions. Still others owe their presence to deficiencies of needed chemical substances, or the accumulation of toxic materials to the point where injury occurs.

In spite of the wide variety of diseases that commonly attack the apple, sufficiently satisfactory control measures have been developed to make apple production a profitable venture.

Root Diseases

Although little is known concerning many root rots affecting apples, white rot and black rot have received attention.

To this group of troubles should also be added crown gall, infectious hairy root, and fire blight.

The *root rots* are for the most part slow-spreading, tree-killing diseases. Their most successful control involves the removal and destruction of affected trees, sterilization of the soil where diseased trees were located, and the exclusion of apples from that spot for several years.

Crown gall is characterized by tumor-like growths which occur chiefly on the roots of apple trees and many other plants. These overgrowths

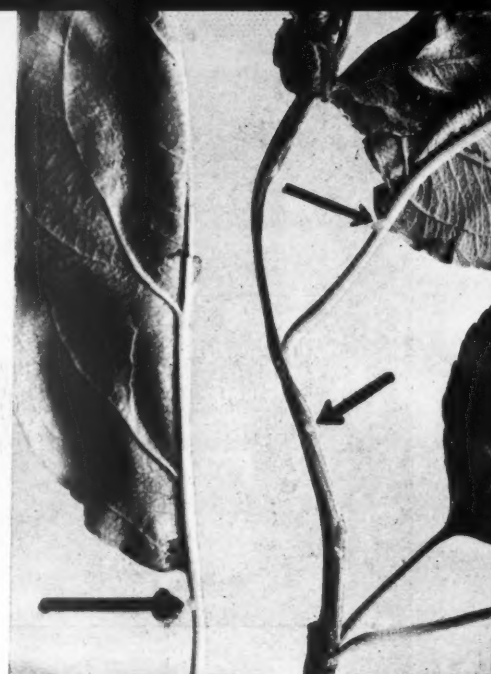
may also occur on the trunk and limbs. The bacteria responsible for this disease gain entrance to the tree through wounds, a common location being at grafts. This disease can be avoided in the nursery by treating the roots with bichloride of mercury before grafting and then wrapping the union with nurseryman's tape. The trees should not be set in soil that has been known to have crown gall during at least the last three years.

The fruit grower should plant only disease-free trees. However, it has been reported that where feasible the disease can be eliminated by painting clean galls with a solution of 20 volumes of Elgetol and 80 volumes of methyl alcohol.

Diseases Affecting Trunk, Limbs, and Twigs

To this group belong the various canker diseases, many of which also affect the foliage and fruit. A very familiar representative of this group is *fire blight*, a bacterial disease, the results of which are most conspicuous two to four weeks after the blooming period. At this time the disease is characterized by the appearance of wilting and dying flower clusters, leaves, and twig terminals. Occasionally the green fruit are affected. From these points the disease may spread to the larger limbs or the trunk where, by girdling, it may cause the death of the limb or tree. Blight is generally active until the rapid growth of the tree ceases.

The losses from fire blight may be reduced by avoiding the stimulation of excessively succulent growth by overfertilization, overpruning, or overcultivation. In addition to this, where labor is available it may be advisable to remove, during the late summer, as many of the diseased areas as possible, paying especial attention to those located on the large limbs or trunks. This is done in an effort to remove "holdover" cankers, or the winter quarters for the bacteria concerned. In removing these cankers, cuts should be made in healthy tissue well beyond the diseased areas. It is advisable to sterilize the pruning tools with a solution of bichloride of mercury (1-1000) after each cut to prevent the pruning tools from carrying the germ to new locations.



Fire blight germ oozing from infected tissues.

Researches in various sections of the country have shown that cankers located in the trunk or large limbs can be sterilized without surgery. This is done by treating the surface of the cankers with a chemical solution containing zinc chloride. Specific directions for its use should be obtained from your State Agricultural Experiment Station. Although the removal of "holdover" cankers is an important control measure, it will not protect trees against infections from nearby apple, pear, quince, or other pomaceous trees and shrubs.

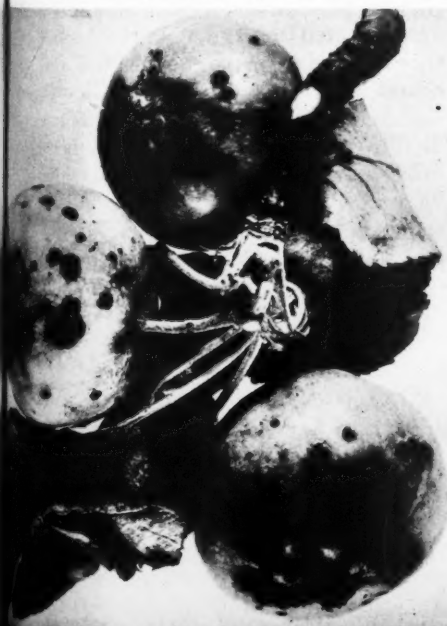
In recent years an application of a 2-6-100 bordeaux mixture as a spray when about 75 per cent of the blossoms are open, has been reported as aiding in the control of this disease. However, its use does not insure control, and it may produce severe fruit russetting.

In addition to fire blight, the trunks and limbs of apple trees are subject to many disturbances of pathogenic or physiogenic origin. Some of the canker disease-producing organisms gain entrance chiefly through wounds in the bark, whereas others enter through natural openings. Since bark injuries provide a ready point for infection for many disease-producing organisms, such as northwestern apple tree canker and crown gall, unnecessary bark bruising should be carefully avoided. Severe losses from many other cankers can, at present, be best avoided by growing varieties which are not unusually susceptible, and by maintaining good thrifty growing conditions.

Foliage and Fruit Diseases

Of the many diseases that affect the foliage and fruits, none is better known than apple scab.

(Continued on page 15)



Apple scab, favored by cool, wet weather.



A Florida grapefruit grove receiving proper care. Such groves produce high-quality fruit.

CITRUS FRUIT IN FLORIDA

By J. W. SITES
Florida Experiment Station

THE buying public is probably more conscious of the value of foods bought today than at any time during our history. The scarcity of many foods formerly included in our diet, the increased price of all foods, the necessity of providing adequate substitutes for foods now unobtainable, and the efficiency of food advertising, all have left an impression of the desirability of getting the greatest nutritional value for the money spent. Citrus research in Florida has kept pace with the ever-changing times, and as a result the consumer of Florida citrus fruit today is buying some of the best fruit which has been marketed from this state.

Even a casual study of the development of citrus culture in Florida will reveal that the comparatively stable conditions which exist today (so far as the growing of citrus is concerned) have not always been present. In fact, hope for successful citrus culture was at such a low ebb only a decade ago that it was felt by many growers advantageous to sell their groves and to turn to some other more remunerative enterprise. During this period the internal quality of Florida citrus fruit was much inferior to that of the fruit now available.

The evolution of citrus culture in Florida is an interesting subject, and no era has been so crowded with changes necessary for its existence as has the last ten years. During this

period investigators learned of the response of citrus to the elements magnesium, manganese, zinc and copper, deficient in most Florida soils, and now known to be essential for the proper nutrition of citrus trees. By the use of these elements in soils where deficiencies exist, production has been increased, the trees are less susceptible to injury from cold and the internal quality of the fruit has been improved. They are applied either as a spray directly to the foliage of the trees, or as an ingredient in the fertilizer mixture. The magnesium, manganese and part of the copper are applied to the soil, whereas the zinc is usually sprayed on the foliage to secure optimum results. In either instance they are usually applied in the form of sulfates. Dolomitic limestone rather than ground agricultural limestone is used to control pH since this material contains about 20 percent magnesium oxide in addition to the calcium. This nutritional program, combined with the recommended spray schedule for the control of insects, mites and diseases, has been responsible for constant increases in production of clean bright fruit with improved flavor and high vitamin C and juice content.

Since any discussion of internal fruit quality of citrus involves the use of terms not generally known or understood by people not associated with the citrus industry, this brief

description is given. The internal characteristics of citrus fruit upon which legal maturity standards are based are: the citric acid content (reported as anhydrous citric acid), the degrees Brix (a measure of the soluble solids content of the juice, which is composed largely of sugars and citric acid), the ratio (this represents the ratio of soluble solids in the juice to the anhydrous citric acid content) and the juice volume (a measure of the volume of juice which can be extracted from the fruit). Citrus fruit shipped from Florida must pass legal maturity standards based on the above mentioned characteristics.

In general, the results of this program have been to increase the soluble solids, citric acid and vitamin C content and to improve the flavor of the juice. The improvement in flavor is accomplished through a better balance between the soluble solids and the citric acid, and has eliminated the insipid taste of earlier fruit. In this vitamin-conscious world in which we are living today the increases in the vitamin C content of Florida fruit must be considered highly significant.

The situation with regard to grapefruit is comparable in most respects to that for the oranges, except that the seedless variety of grapefruit is less responsive than the seedy varieties. The 1940-41 season was favorable for the formation of both sugars and citric acid in grapefruit, whereas in the following year, without any changes in treatment, location of the plots, time of collecting the samples or other controllable factors, the citric acid content was much lower and the solids were also materially reduced. What the exact relationships of climate and the formation of citric acid, sugars, etc. in citrus fruit may be is at the present time not well understood, but investigations are being made.

During the past two seasons, especially, much of the production of Florida citrus has gone to the armed forces in the form of canned juice and concentrate products. Processors of citrus concentrates are especially benefited by the increases which have been brought about in soluble solids and vitamin C content since the army is requiring high vitamin content foods, and high solids make the preparation of concentrates more easily accomplished.

High juice content, improved flavor, and increased vitamin C content are characteristics of the citrus fruit Florida is now producing, but these qualities and others will doubtlessly be improved through a better understanding of physiological, soil, and climatic relationships.

YIELDS, prices, and controls were the questions most to the front at the Annual Meeting of the National Apple Institute at Washington, D.C., June 16 and 17. Members voted in favor of the formation of a National Fruit Council with details left to a committee appointed by President Reuben G. Benz. Inspiration for the Council, it was generally agreed, came from the excellent work done by the Canadian Council in marketing Canadian fruit.

The 1944 apple crop was estimated at 109,000,000 bushels, about half-way between the 1942 crop of 127,-655,000 and last year's short crop of 88,000,000 bushels. A few optimistic growers predicted a 1944 crop of 130,000,000 bushels if certain growing factors continue favorable. Others pointed out how remarkably accurate previous June estimates of the Apple Institute have been and warned against taking rainbow hunches too seriously at this time. They cited the prevalence of the codling moth as a depressing factor.

Of the estimates for states, Washington led with 24,000,000 bushels. New York was second with 16,000,-000 and Virginia third with 10,500,-000. Michigan was fourth with 7,200,-000 and Pennsylvania fifth with an even 7,000,000 bushels. California's estimate was 6,500,000, Ohio's 5,500,000 and West Virginia's 5,000,-000 bushels. No other state came close to this last figure.

E. A. Meyer, associate chief of

Apple scab, a disease favored by cool, wet weather, produces spots on the foliage and fruit which often result in misshapen, cracked fruits, which, together with the diseased foliage, may drop excessively. This disease first appears on the leaves in the spring, as a brownish spot with a webby appearance, often with indefinite borders. During their early development, the spots on the apple resemble the leaf spots. However, large scab spots several months old show checked and cracked corky host tissue in the center of these spots. The scab spots arising from fruit infection occurring in the fall may not make their appearance until some time during the storage period. Such spots are very small (about $\frac{1}{8}$ inch in diameter) and are usually black in color.

Apple scab can be satisfactorily controlled in most localities by spraying during the pre-bloom and petal-fall periods with a good finely-ground wettable sulfur or with a lime sulfur solution. Where the spring

APPLE INSTITUTE

*10th Annual Meeting Widely
Attended*

By MEADOR WRIGHT

fruits and vegetables of the War Foods Administration, warned growers not to depend upon huge Army and other government purchases to dispose of this year's crop. "The day is past," he said, "when you can throw fruit into a basket and get fabulous prices. The honeymoon is over. One of our biggest cherry, apricot, and peach crops will tend to have a depressing effect on apple prices. Last year there were some millions of soldiers in American camps to consume fresh apples. This year most of these will be overseas. We will need every marketing facility to take care of our crop."

Other speakers were less optimistic about the supply of apples, and thought there would be a moderate shortage. It was generally agreed that the progress of the war would have an important bearing, especially on whether it would be possible to export a sizeable amount of fresh apples. Carl G. Wooster of WFA emphasized the magnitude of apple demand. "If there is a good supply," he said, "it is matched by an unusual demand. I believe we could find a market for 150,000,000 bushels of apples. If the final yield is but 109,000,000 bushels, civilians will not get their normal supply." Mr. Woos-

ter predicted that regardless of the size of the crop no government support would be given the market except for dried apples, which has already been announced.

Outlining the government's position on price control, John F. Gismond of OPA stated that ceiling prices would almost certainly be fixed, and that such prices would probably be announced by July 15. He thought it probable that Freight Absorption subsidies would be abolished in favor of F.O.B. prices, or possibly a compromise between the two methods. Ceiling prices would be announced as a precaution, he said, even though the supply of apples should be such that prices would not reach this ceiling.

An element of humor entered the discussion when a grower warned the government to re-examine the situation from time to time in regard to the probable apple yield. "If it should turn out that we definitely have a short crop, we will face a worse condition than last year," he said. Shot back Gismond: "Is that possible?"

Senator Harry F. Byrd of Virginia was guest speaker at the dinner at Hotel Washington with Henry W. Miller, Jr. of West Virginia as toastmaster. Senator Byrd described his efforts as fruit grower, with emphasis on his experimenting with color sports. He warned growers not to pick fruit too early and to give more attention to pollination. One of his orchards in the Shenandoah Valley, he said, had 115,000 trees.

APPLE DISEASES

(Continued from page 13)

weather remains cool and wet beyond the petal-fall period, fungicidal protection will also be needed for an additional spray application or so. In sections where an oil-lead arsenate schedule is used, beginning at the third or fourth cover, and protection against scab is needed during the early cover sprays, some of the new organic fungicides, such as fermate, offer distinct advantages for use during this period. For example, unlike sulfur, fermate can be used with or preceding oil without increasing the possibility of spray injury, and it seems that it can be used at this season with less danger from injury than when a copper fungicide is used.

In some sections, where scab is difficult to control, a thorough ground spray of Elgetol ($\frac{1}{2}$ gal.) in water (100 gals.), applied in the spring be-

fore the appearance of the leaves, simplifies this problem. The appearance of storage scab can be delayed by holding the apples in cold storages.

Brooks' Fruit Spot, a disease of the fruit, does not become visible until harvest time or even during the storage period, despite the fact that infection occurs shortly after petal fall. This disease is characterized by the appearance of small reddish, dark green or black spots located at the lenticels chiefly at the calyx end. By the use of a copper fungicide or by using fermate during the infection period, good control may be achieved. In New Jersey these materials used at the 17, 27, and 37-day applications provide good protection.

Bitter Rot, although principally a disease of the fruit, may also produce cankers on the larger limbs. Fruits in all stages of development are susceptible and may become infected if warm, humid conditions prevail. The bitter rot fungus produces light-brown circular rotted spots which remain

(Continued on page 16)

Profits in Wartime

A Statement by International Harvester

BUSINESS, particularly big business, has to take a lot of criticism. Much of it is honest and well-meant. We are glad to have that kind of criticism and we try to benefit from it. But some criticism is not honest or well-meant. Some of it springs from malice, attempting to mislead the public by twisting facts.

Right now business is suffering from an example of this second kind of criticism. Judging by what we read and hear, it has succeeded in misleading many people. We refer to the charge that big business is profiteering, is "getting rich out of the war." Nobody, so far as we know, has made that charge directly against the Harvester Company. But we are a large business and an integral part of American business. If a mistaken idea is damaging to business in general, it is damaging to us. Hence this statement.

Doubtless there are cases where some corporations have earned more money during the war than most people would think proper. But those cases are exceptional. One thing we know is that public statements giving business "profits" before payment of taxes have been used to create a false picture. As a practical matter, there is no such thing as a profit before taxes. Taxes are as much a cost of doing business as money paid for labor or materials. The only profit a corporation earns for its owners is what it has left after all expenses, including taxes, have been paid.

The May bulletin of the National City Bank of New York, a recognized statistical authority, tells us what has actually happened during the war to 50 of the largest manufacturing corporations in the country (of which we are one). That bulletin reports that during the years 1940-1943 the combined sales (or gross income) of the 50 companies went up 143%. Their bill for wages and salaries went up 172%. Their taxes went up 225%. But their profits went down 14%.

And just to keep the record straight, in the case of our Company, our profit last year (1943) was 16% lower than it was in the year before Pearl Harbor, although our sales were 23% higher. Furthermore, our president has officially informed Harvester stockholders that for 1944 our sales will be still higher and our profit will be still lower.

We have never wanted or expected to receive more than a moderate profit on our wartime production. That is our policy, and we have lived up to it. We, like most of America's industry, are not making excessive profits out of the war.

Lack of space prevents giving more than brief facts on this subject. Any reader desiring additional information may obtain a short folder on the topic by writing to the Public Relations Department, International Harvester Company, 180 North Michigan Avenue, Chicago 1, Illinois.

INTERNATIONAL HARVESTER

APPLE DISEASES

(Continued from page 15)

quite firm in texture. These spots darken with age and pink spore masses appear near their centers. This disease may destroy a susceptible crop of apples in a relatively short time if favorable environmental conditions prevail. For its control, a thorough application of a 4-4-100 bordeaux mixture at two-week intervals may be used, beginning—depending on the weather—during the early cover sprays and until the harvest.

Blue Mold is the most widespread and destructive storage disease. It has been credited with causing from 75 to 90 per cent of the decay that occurs during this period.

Blue mold is well described by its name, and by the name "Soft Rot" which is sometimes given to it. Rotted tissue is soft and light brown in color, with moderately sized lesions usually showing a bluish-green surface growth, which is nearly white in its initial stages.

The fungus responsible for this disease gains entrance to the ripe fruit, through mechanical or chemical injuries in the skin, through open calyx canals or open lenticels. Infection usually occurs at harvest or packing time, however the disease may spread during the storage period where the apples are held in common storage. New infections are not apt to occur, and infections that have occurred develop slowly at cold storage temperatures (30-32° F.). Since mechanical injuries are so important in the spread of the disease, it is important that the fruit be harvested before overripe, and picked and stored with care to avoid unnecessary injuries. Decaying fruits should not be allowed to accumulate around the packing shed nor should they be permitted to enter the arsenical removing bath. New baskets should be used for the harvesting and storage of apples since old dirty baskets may carry a heavy blue mold spore load. It is sometimes suggested that old baskets, packing houses, and storage quarters be sprayed with a solution of sodium hypochlorite having 0.4 per cent available chlorine. Copper sprays are not effective against blue mold.

Recently, experiments and observations have shown that controlled-atmospheric storage rooms (in which oxygen and carbon dioxide levels are controlled) offer promise for the control of blue mold decay.

Through June 17th, according to WFA reports, 814 carloads of peaches had been shipped to market as against 411 carloads last year.



World's Largest Producer of Insecticide

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ORTHOL-K Summer Oil and Black Leaf 40 and Black Leaf 155 are strong combinations when used to combat leafhoppers, green apple aphids, pistol case bearers and psylla, as well as in cases where the codling moth is in evidence.

We will gladly assist in planning a spray program for you according to the necessities of your orchard.

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STATE NEWS

CONNECTICUT—Following a relatively mild winter, all kinds of fruit trees in Connecticut showed a good bloom throughout May. McIntosh apples, in particular, had extremely heavy blossom. Although 1944 is the year for most Baldwin orchards in this State to bear a heavy crop, some orchards still suffer from the winter injury of 1943 and, therefore, did not show as heavy a bloom as was anticipated.

Weather conditions during the early bloom stages were very favorable for a satisfactory fruit set. Although there was some serious winter injury to a few peach orchards a year ago, most of the peach trees in Connecticut had a heavy bloom this year. The pear bloom was extremely heavy in contrast to the light pear bloom of a year ago.—*H. A. ROLLINS, Fruit Specialist, Storrs.*

INDIANA—On July 12 the Indiana Horticultural Society, in cooperation with the Elkhart County Horticultural Society, will meet at the orchard of Charles E. Judson, one mile north of U.S. 20 on Indiana Route 15. Following a luncheon and program there the visitors will visit the Bristol Orchards, managed by V. V. Clarke, President of the State Horticultural Society.

On July 24 the State Society in cooperation with the Knox County Horticultural Society will hold a joint meeting at Vincennes. The morning meeting will be conducted at the Dixie Orchards, three miles southeast of Vincennes on Hart Street Road. Earl and Robert Byers operate this orchard. The afternoon program will be in the orchard of W. C. Reed.

The Indiana Berry Growers' Association will have its annual meeting August 1, at St. Anthony on State Route 64. The Dubois County Fruit and Vegetable Marketing Association, under the management of Rev. A. E. Fischer, will be host.—*MON-ROE McCOWAN, Sec'y, Lafayette.*

OHIO—The Horticulture Department of the Ohio Agricultural Experiment Station is introducing for trial a new apple variety which has been named "Melrose." The variety resulted from a cross made in 1927 between Jonathan and Delicious; the former being the pollen parent. The tree was planted in the trial orchard in 1929 and bore fruit first in 1937. Fruits have been borne on the original tree since 1937.

The fruits are attractive, well colored, roundish-oblato, and medium in size. In these respects it resembles Jonathan. The flavor, however, is milder. Its over-color is lighter and brighter than Jonathan while the flesh is yellow, medium in texture, firm, and juicy. It is predicted to be an excellent fruit for sauce and pies, but due to its size is not ideal for baking. Size is probably the greatest disadvantage of this fruit, known to date.

The annual meeting of the Ohio Apple Institute was scheduled for June 29-30, Seneca Hotel, Columbus.

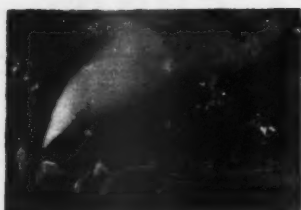
ARKANSAS—In this state the early apples are generally good, but the fall and winter apples, generally light. Strawberries, likewise, produced a light crop. Grapes were not damaged as much by spring frosts as was previously predicted, although a combination of excessive moisture, lack of manpower and machinery is causing black rot to show up excessively in some vineyards.

Peach orchards of Northwest Arkansas are practically devoid of fruit, but the large peach belts farther south will have a fair to good yield.—*THOMAS ROTH-ROCK, Sec'y, Springdale.*

BUYER'S GUIDE FOR THE FRUIT FARM

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			Accessories—Saw	25	Accessories—Saw	20	Sorters—Berry	39
			Accessories—Saw	25	Accessories—Saw	45	Sorting Tables—Fruit	39
			Accessories—Saw	25	Accessories—Saw	44	Sowers—Hand Seed	32
			Accessories—Saw	25	Accessories—Saw	24	Spark Plugs	45
			Accessories—Saw	25	Accessories—Saw	32	Sponge Rubber Sheet	39
			Accessories—Saw	25	Accessories—Saw	29	Spray Accessories	22
			Accessories—Saw	25	Accessories—Saw	23	Spray Clothing	23
			Accessories—Saw	25	Accessories—Saw	23	Spray Hose Fittings	23
			Accessories—Saw	25	Accessories—Saw	23	Spray Protection	23
			Accessories—Saw	25	Accessories—Saw	23	Sprayer Equipment	23
			Accessories—Saw	25	Accessories—Saw	23	Sprayers—Hand, Power, Stationary	23
			Accessories—Saw	25	Accessories—Saw	23	Tractor	24
			Accessories—Saw	25	Accessories—Saw	23	Spraying Equipment	21
			Accessories—Saw	25	Accessories—Saw	23	Spraying Material	25
			Accessories—Saw	25	Accessories—Saw	23	Sprayers	27
			Accessories—Saw	25	Accessories—Saw	23	Sprinkler Systems	37
			Accessories—Saw	25	Accessories—Saw	23	Sprinklers	39
			Accessories—Saw	25	Accessories—Saw	23	Stamping Inks	42
			Accessories—Saw	25	Accessories—Saw	23	Stamping Pads	42
			Accessories—Saw	25	Accessories—Saw	23	Stamps—Rubber	42
			Accessories—Saw	25	Accessories—Saw	23	Staplers	39
			Accessories—Saw	25	Accessories—Saw	23	Staples	39
			Accessories—Saw	25	Accessories—Saw	23	Stationary Spray Systems	24
			Accessories—Saw	25	Accessories—Saw	23	Steamship Lines	44
			Accessories—Saw	25	Accessories—Saw	23	Steel Construction	44
			Accessories—Saw	25	Accessories—Saw	23	Steel Roofing and Siding	44
			Accessories—Saw	25	Accessories—Saw	23	Stickers	27
			Accessories—Saw	25	Accessories—Saw	23	Stitchers	39
			Accessories—Saw	25	Accessories—Saw	23	Stitchers—Cherries	43
			Accessories—Saw	25	Accessories—Saw	23	Stitchers—Peach	43
			Accessories—Saw	25	Accessories—Saw	23	Storages	40, 41
			Accessories—Saw	25	Accessories—Saw	23	Storage Curtains	41
			Accessories—Saw	25	Accessories—Saw	23	Stump Pullers	32
			Accessories—Saw	25	Accessories—Saw	23	Sulphate of Ammonia	36
			Accessories—Saw	25	Accessories—Saw	23	Sulphur	28
			Accessories—Saw	25	Accessories—Saw	23	Sulphur Dioxide	43
			Accessories—Saw	25	Accessories—Saw	23	Sulphur Dusts	20
			Accessories—Saw	25	Accessories—Saw	23	Sulphur—Solis	30
			Accessories—Saw	25	Accessories—Saw	23	Sulphur—Spray	28
			Accessories—Saw	25	Accessories—Saw	23	Summer Oils	27
			Accessories—Saw	25	Accessories—Saw	23	Superphosphate	30
			Accessories—Saw	25	Accessories—Saw	23	T	
			Accessories—Saw	25	Accessories—Saw	23	Tables—Packing	39
			Accessories—Saw	25	Accessories—Saw	23	Tables—Sorting Fruit	39
			Accessories—Saw	25	Accessories—Saw	23	Tank Fillers	24
			Accessories—Saw	25	Accessories—Saw	23	Tanks—Wood, Water Storage	21
			Accessories—Saw	25	Accessories—Saw	23	Tape—Grafting	34
			Accessories—Saw	25	Accessories—Saw	23	Tar Emulsions	41
			Accessories—Saw	25	Accessories—Saw	23	Tarpaulins—Insulated	32
			Accessories—Saw	25	Accessories—Saw	23	Tarcracks	30
			Accessories—Saw	25	Accessories—Saw	23	Testing Outfits—Soil	30
			Accessories—Saw	25	Accessories—Saw	23	Thermometers	35, 41
			Accessories—Saw	25	Accessories—Saw	23	Thermostats	35, 41
			Accessories—Saw	25	Accessories—Saw	23	Tile Building	32
			Accessories—Saw	25	Accessories—Saw	23	Tillage Equipment	31-33
			Accessories—Saw	25	Accessories—Saw	23	Tillers—Rotary	32
			Accessories—Saw	25	Accessories—Saw	23	Tires—Pneumatic	45
			Accessories—Saw	25	Accessories—Saw	23	Tire Pumps and Accessories	45
			Accessories—Saw	25	Accessories—Saw	23	Torches—Lighting	44
			Accessories—Saw	25	Accessories—Saw	23	Torches—Wood Killer	21
			Accessories—Saw	25	Accessories—Saw	23	Tractor Chains	33
			Accessories—Saw	25	Accessories—Saw	23	Tractors—Continuous Tread	33
			Accessories—Saw	25	Accessories—Saw	23	Tractors—Garden	33
			Accessories—Saw	25	Accessories—Saw	23	Tractors—Orchard and Grove	33
			Accessories—Saw	25	Accessories—Saw	23	Tractors—Wheel	33
			Accessories—Saw	25	Accessories—Saw	23	Trailers	45
			Accessories—Saw	25	Accessories—Saw	23	Transportation	45
			Accessories—Saw	25	Accessories—Saw	23	Traps—Rodent	21
			Accessories—Saw	25	Accessories—Saw	23	Tree Bands	29
			Accessories—Saw	25	Accessories—Saw	23	Tree Bracers	34
			Accessories—Saw	25	Accessories—Saw	23	Tree Moving Equipment	32
			Accessories—Saw	25	Accessories—Saw	23	Tree Protectors	34
			Accessories—Saw	25	Accessories—Saw	23	Trellises	30
			Accessories—Saw	25	Accessories—Saw	23	Tri-Basic Copper Sulphate Dusts	20
			Accessories—Saw	25	Accessories—Saw	23	Truck Chains	45
			Accessories—Saw	25	Accessories—Saw	23	Trucks—Motor	45
			Accessories—Saw	25	Accessories—Saw	23	Tubes	45
			Accessories—Saw	25	Accessories—Saw	23	Turners—Basket	39
			Accessories—Saw	25	Accessories—Saw	23	U	
			Accessories—Saw	25	Accessories—Saw	23	Urea	30
			Accessories—Saw	25	Accessories—Saw	23	V	
			Accessories—Saw	25	Accessories—Saw	23	Valves	24
			Accessories—Saw	25	Accessories—Saw	23	Varnishes	44
			Accessories—Saw	25	Accessories—Saw	23	Ventilators	41
			Accessories—Saw	25	Accessories—Saw	23	W	
			Accessories—Saw	25	Accessories—Saw	23	Washers—Fruit	39
			Accessories—Saw	25	Accessories—Saw	23	Water System Pumps	21
			Accessories—Saw	25	Accessories—Saw	23	Washing Compounds—Fruit	21
			Accessories—Saw	25	Accessories—Saw	23	Waterproofing Compounds	41
			Accessories—Saw	25	Accessories—Saw	23	Water Storage Tanks	21
			Accessories—Saw	25	Accessories—Saw	23	Wax	39
			Accessories—Saw	25	Accessories—Saw	23	Wax Emulsions	34
			Accessories—Saw	25	Accessories—Saw	23	Wax—Grafting	34
			Accessories—Saw	25	Accessories—Saw	23	Wax Burners, Torches	21
			Accessories—Saw	25	Accessories—Saw	23	Wax Hoods	33
			Accessories—Saw	25	Accessories—Saw	23	Wood Killers	21
			Accessories—Saw	25	Accessories—Saw	23	Wettable Sulphur	28
			Accessories—Saw	25	Accessories—Saw	23	Wheels	33
			Accessories—Saw	25	Accessories—Saw	23	Wheel Tractors	33
			Accessories—Saw	25	Accessories—Saw	23	Wind Machines	30
			Accessories—Saw	25	Accessories—Saw	23	Wire Fencing	30
			Accessories—Saw	25	Accessories—Saw	23	Wood Preserving	41
			Accessories—Saw	25	Accessories—Saw	23	Wound Dressings	34
			Accessories—Saw	25	Accessories—Saw	23	Wrappers—Oiled, Plain, Transparent	42
			Accessories—Saw	25	Accessories—Saw	23	X	
			Accessories—Saw	25	Accessories—Saw	23	Xanthone	27
			Accessories—Saw	25	Accessories—Saw	23	Z	
			Accessories—Saw	25	Accessories—Saw	23	Zinc Arsenite	25
			Accessories—Saw	25	Accessories—Saw	23	Zinc Sulphate	28



INSECT AND DISEASE CONTROL



DUSTING EQUIPMENT

Dusters

HAND

Agkem, Inc., Quincy, Ill.
American Cyanamid & Chemical Corp., Insecticide Dept., New York, N.Y.
John Bacon, Inc., Gasport, N.Y.
Bean-Cutler Div., F.M.C., San Jose, Calif.
E. C. Brown Co., Rochester, N.Y.
Brown Fence & Wire Co., Cleveland, Ohio
Dobbins Mfg. Co., Elkhart, Ind.
A. B. Farquhar Co., Ltd., York, Pa.
H. D. Hudson Mfg. Co., Chicago, Ill.
Los Angeles Chemical Co., Los Angeles, Calif.
Messinger Mfg. Co., Tatamy, Pa.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Nico-Dust Mfg. Co., Los Angeles, Calif.
Root Mfg. Co., Cleveland, Ohio
D. B. Smith & Co., Utica, N.Y.
Stauffer Chemical Co., New York, N.Y.
Edwin C. Tyson, Flora Dale, Pa.

POWER

Agicide Laboratories, Inc., Racine, Wis.
John Bean Mfg. Co., Lansing, Mich.
Brown Fence & Wire Co., Cleveland, Ohio
A. B. Farquhar Co., Ltd., York, Pa.
"Friend" Mfg. Co., Gasport, N.Y.
Master Fan Corp., Los Angeles, Calif.
Messinger Mfg. Co., Tatamy, Pa.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Root Mfg. Co., Cleveland, Ohio
Shunk Mfg. Co., Bucyrus, Ohio
Edwin C. Tyson, Flora Dale, Pa.

Mixers, Dust

Agicide Laboratories, Inc., Racine, Wis.
John Bean Mfg. Co., Lansing, Mich.
Bean-Cutler Div., F.M.C., San Jose, Calif.
"Friend" Mfg. Co., Gasport, N.Y.
Messinger Mfg. Co., Tatamy, Pa.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Root Mfg. Co., Cleveland, Ohio
Shunk Mfg. Co., Bucyrus, Ohio

DUSTING MATERIALS

Dust Fillers

Agicide Laboratories, Inc., Racine, Wis.
Calcium Carbonate Co., Chicago, Ill.
Celotex Corp., Chicago, Ill.
France Stone Co., Toledo, Ohio
Gibsonburg Lime Products Co., Gibsonburg, Ohio
Ohio Hydrate & Supply Co., Woodville, Ohio
United States Gypsum Co., Chicago, Ill.
Warner Co., Bellefonte Div., Bellefonte, Pa.
Woodville Lime Products Co., Toledo, Ohio

Fluorine Dusts

Agkem, Inc., Quincy, Ill.
Aluminum Ore Co., Pittsburgh, Pa.
Chipman Chemical Co., Inc., Bound Brook, N.J.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
General Chemical Co., New York, N.Y.
Pennsylvania Salt Mfg. Co., Philadelphia, Pa.
Stauffer Chemical Co., New York, N.Y.

Lime

Aluminum Ore Co., Pittsburgh, Pa.
Celotex Corp., Chicago, Ill.
Gibsonburg Lime Products Co., Gibsonburg, Ohio
Kimbalton Lime Co., Inc., Shawsville, Va.
Marble Cliff Quarries Co., Columbus, Ohio
Ohio Hydrate & Supply Co., Woodville, Ohio
Scioto Lime & Stone Co., Delaware, Ohio
Tennessee Corp., Lockland, Ohio
United States Gypsum Co., Chicago, Ill.
Warner Co., Bellefonte Div., Bellefonte, Pa.
Woodville Lime Products Co., Toledo, Ohio
Woolfolk Chemical Works, Ltd., Ft. Valley, Ga.

Monohydrated Copper Sulphate Dusts

Ansbacher-Siegle Corp., Brooklyn, N.Y.
Chipman Chemical Co., Inc., Bound Brook, N.J.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
General Chemical Co., New York, N.Y.

Mechling Bros., Chemical Div. of General Chemical Co., Philadelphia, Pa.
Miller Chem. & Fertilizer Corp., Baltimore, Md.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Phelps Dodge Refining Corp., New York, N.Y.
Sherwin-Williams Co., Cleveland, Ohio
Tennessee Corp., Atlanta, Ga.
Woolfolk Chemical Wks., Ltd., Ft. Valley, Ga.

Nicotine Dusts

Ansbacher-Siegle Corp., Brooklyn, N.Y.
California Spray-Chemical Corp., Richmond, California, and Elizabeth, N. J.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
E. I. du Pont de Nemours & Co., Inc., R. & H. Chemicals Dept., Pacific Div., El Monte, Calif.
General Chemical Co., New York, N.Y.
Jean Maclean, Bridgeton, Ind.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Nicotine Production Corp., Clarksville, Tenn.
Tobacco By-Products & Chemical Corp., Louisville, Ky.
Van Waters & Rogers, Inc., Portland, Ore.
Woolfolk Chemical Wks., Ltd., Ft. Valley, Ga.

Pyrethrum Dusts

Agkem Inc., Quincy, Ill.
Ansbacher-Siegle Corp., Brooklyn, N.Y.
Chipman Chemical Co., Inc., Bound Brook, N.J.
General Chemical Co., New York, N.Y.
Kay-Fries Chemicals, Inc., New York, N.Y.
McLaughlin Gormley King Co., Inc., Minneapolis, Minn.
Mechling Bros., Chemical Div. of General Chemical Co., Philadelphia, Pa.
Micronizer Processing Co., Inc., Moorestown, N.J.
Miller Chemical & Fertilizer Corp., Baltimore, Md.
S. B. Penick & Co., New York, N.Y.
B. G. Pratt Co., Hackensack, N. J.
Woolfolk Chemical Wks., Ltd., Ft. Valley, Ga.

Rotenone Dusts

Agicide Laboratories, Inc., Racine, Wis.
Agkem Inc., Quincy, Ill.
Celotex Corp., Chicago, Ill.
Chipman Chemical Co., Inc., Bound Brook, N.J.
Corona Chemical Div. of Pittsburgh Plate Glass Co., Milwaukee, Wis.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
E. I. du Pont de Nemours & Co., Inc., R. & H. Chemicals Dept., Pacific Div., El Monte, Calif.
General Chemical Co., New York, N.Y.
Jean Maclean, Bridgeton, Ind.
John Lucas Co., Philadelphia, Pa.
Mechling Bros., Chemical Div. of General Chemical Co., Philadelphia, Pa.
Micronizer Processing Co., Inc., Moorestown, N.J.
Miller Chem. & Fertilizer Corp., Baltimore, Md.
National Sulphur Co., Inc., New York, N.Y.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
S. B. Penick & Co., New York, N.Y.
Sherwin-Williams Co., Cleveland, Ohio
Woolfolk Chemical Wks., Ltd., Ft. Valley, Ga.

Sulphur Dusts

Chipman Chemical Co., Inc., Bound Brook, N.J.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
E. I. du Pont de Nemours & Co., Inc., R. & H. Chemicals Dept., Pacific Div., El Monte, Calif.
General Chemical Co., New York, N.Y.
Koppers Co., Tar and Chemical Div., Pittsburgh, Pa.
John Lucas Co., Philadelphia, Pa.
Mechling Bros., Chemical Div. of General Chemical Co., Philadelphia, Pa.
Micronizer Processing Co., Inc., Moorestown, N.J.
National Sulphur Co., Inc., New York, N.Y.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Sherwin-Williams Co., Cleveland, Ohio
South Haven Chemical Co., South Haven, Mich.
Stauffer Chemical Co., New York, N.Y.
Tennessee Corp., Atlanta, Ga.
Van Waters & Rogers, Inc., Portland, Ore.
Woolfolk Chemical Wks., Ltd., Ft. Valley, Ga.

Tri-Basic Copper Sulphate Dusts

Celotex Corp., Chicago, Ill.
General Chemical Co., New York, N.Y.
Sherwin-Williams Co., Cleveland, Ohio
Tennessee Corp., Atlanta, Ga.

ORCHARD SANITATION

Acetylene Exploder

Salt Lake Stamp Co., Salt Lake City, Utah

Bands, Tree

John Bacon Inc., Gasport, N.Y.
M. J. Beck Co., Successor to M. H. Hunt & Son, Lansing, Mich.
Bemis Bro. Bag Co., St. Louis, Mo.
Fruit & Produce Packing, Inc., Indianapolis, Ind.
Edwin H. House, Saugatuck, Mich.
M. A. Koeller, Barry, Ill.
Miller Chem. & Fertilizer Corp., Baltimore, Md.
Owens-Illinois Glass Co., Toledo, Ohio
F. A. Read, Inc., Winchester, Va.
Rice, Trew & Rice Co., Biglerville, Pa.
Tanglefoot Co., Grand Rapids, Mich.
Edwin C. Tyson, Flora Dale, Pa.

Beta Naphthol

American Cyanamid & Chemical Corp., Insecticide Dept., New York, N.Y.
Braun-Knecht-Heimann-Co., San Francisco, Calif.
Sherwin-Williams Co., Cleveland, Ohio

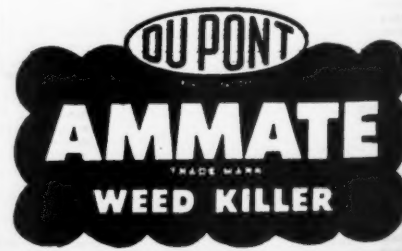
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INSECT AND DISEASE CONTROL

Brush Burners

Aerol Burner Co., Inc., West New York, N.J.
Dobbins Mfg. Co., Elkhart, Ind.
Hauck Mfg. Co., Brooklyn, N.Y.
Ker-O-Kil Mfg. Co., Redwood City, Calif.

Brush Cutters

E. C. Atkins & Co., Indianapolis, Ind.
Bartlett Mfg. Co., Detroit, Mich.
A. M. Leonard & Son, Piqua, Ohio
Seymour Smith & Son, Inc., Oakville, Conn.
Carroll R. Tiffany, Conklin, N.Y.
J. Wiss & Sons Co., Newark, N.J.

Calcium Chloride

American Cyanamid & Chemical Corp., New York, N.Y.
Braun-Knecht-Heimann Co., San Francisco, Calif.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
General Chemical Co., New York, N.Y.
Harshaw Chemical Co., Cleveland, Ohio
Hercules Powder Co., Inc., Wilmington, Del.
Merck & Co., Inc., Rahway, N.J.
Pennsylvania Salt Mfg. Co., Philadelphia, Pa.
Solvay Sales Corp., New York, N.Y.
Texas Co., New York, N.Y.

Ethylene Dichloride

Braun-Knecht-Heimann Co., San Francisco, Calif.
Carbide & Carbon Chemicals Corp., New York, N.Y.
Dow Chemical Co., Midland, Mich.
Fred Durand, Woodbury, Ga.
General Chemical Co., New York, N.Y.
McKenzie Chemical Co., Montezuma, Ga.
Miller Chem. & Fertilizer Corp., Baltimore, Md.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
G. S. Robins Co., St. Louis, Mo.
Woolfolk Chemical Wks., Ltd., Ft. Valley, Ga.

Insect Barriers

California Spray-Chemical Corp., Richmond, Calif., and Elizabeth, N. J.
Clarion Development Co., Inc., Clarion, Pa.
Standard Oil Co. of Indiana, Chicago, Ill.
Tanglefoot Co., Grand Rapids, Mich.

Insect Electrocuters

Alert Electric Door Control Co., Los Angeles, Calif.
Chicago Electric Scientific Co., Chicago, Ill.
Insect Electrocuter Co., Cincinnati, Ohio
Monolite Co., Berkeley, Calif.

Rodent Destroyers

FIREARMS
Marlin Firearms Co., New Haven, Conn.
Remington Arms Co., Inc., Bridgeport, Conn.
Savage Arms Co., New York, N.Y.
Winchester Repeating Arms Co., New Haven, Conn.

FUMIGATORS

J. P. Devine Mfg. Co., Mt. Vernon, Ill.

POISONS

American Cyanamid & Chemical Corp., Insecticide Dept., New York, N.Y.
Antrol Laboratories, Inc., Los Angeles, Calif.
General Chemical Co., New York, N.Y.
K-R-O Co., Springfield, Ohio
Jean Maclean, Bridgeton, Ind.
Mallinckrodt Chemical Works, St. Louis, Mo.
Rat Biscuit Co., Springfield, Ohio
Rose Exterminator Co., Chicago, Ill.
D. B. Smith & Co., Inc., Utica, N.Y.

TRAPS

Animal Trap Co. of America, Lititz, Pa.
Antrol Laboratories, Inc., Los Angeles, Calif.
Michigan Wire Goods Co., Niles, Mich.

Rodent Repellents

M. J. Beck Co., Successor to M. H. Hunt & Son, Lansing, Mich.
Clarion Development Co., Inc., Clarion, Pa.
Hammond Paint & Chemical Co., Beacon, N.Y.
J. Livingstone, Jr., Milwaukee, Wis.
Sudbury Laboratory, So. Sudbury, Mass.
Rollin H. Tabor, Mt. Vernon, Ohio
Tanglefoot Co., Grand Rapids, Mich.

Scrapers, Bark

Bartlett Mfg. Co., Detroit, Mich.
Fruit Packing Equipment Co., Swoope, Va.
A. M. Leonard & Son, Piqua, Ohio
Carroll R. Tiffany, Conklin, N.Y.
Edwin C. Tyson, Florida Dale, Pa.

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Braun-Knecht-Heimann Co., San Francisco, Calif.
California Spray-Chemical Corp., Richmond, Calif.
Chipman Chemical Co., Inc., Bound Brook, N.J.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
General Chemical Co., New York, N.Y.
James Good Co., Philadelphia, Pa.
Harshaw Chemical Co., Cleveland, Ohio
Mallinckrodt Chemical Works, St. Louis, Mo.
Merck & Co., Inc., Rahway, N.J.
Miller Chemical & Fertilizer Corp., Baltimore, Md.
Pennsylvania Salt Mfg. Co., Philadelphia, Pa.
Sherwin-Williams Co., Cleveland, Ohio
Standard Agricultural Chemicals, Inc., Hoboken, N.J.
Stauffer Chemical Co., Inc., New York, N.Y.
Edwin C. Tyson, Florida Dale, Pa.
Wheeler, Reynolds & Stauffer, San Francisco, Calif.

SPRAYING EQUIPMENT

Pumps, Water System

Aeromotor Co., Chicago, Ill.
American-Marsh Pumps, Inc., Battle Creek, Mich.
American Well Works, Aurora, Ill.
John Bean Mfg. Co., Lansing, Mich.
Bean-Cutler Div., F.M.C., San Jose, Calif.
Campbell & Budlong, Inc., San Jose, Calif.
A. D. Cook, Inc., Lawrenceburg, Ind.
Crane Co., Chicago, Ill.
Dayton Pump & Mfg. Co., Dayton, Ohio
Decatur Pump Co., Decatur, Ill.
Deming Co., Salem, Ohio
Dempster Mill Mfg. Co., Beatrice, Nebr.
Domestic Engine & Pump Co., Shippensburg, Pa.
Duro Co., Dayton, Ohio
Fairbanks, Morse & Co., Chicago, Ill.
Flint & Walling Mfg. Co., Kendallville, Ind.
Goulds Pumps, Inc., Seneca Falls, N.Y.
Joshua Hendy Iron Works, Pomona Pump Co. Div., Sunnyvale, Calif.
Kewanee Private Utilities Co., Kewanee, Ill.
March Automatic Irrigation Co., Muskegon, Mich.
F. E. Myers & Bro. Co., Ashland, Ohio
Novo Engine Co., Lansing, Mich.
Parma Water Lifter Co., Parma, Idaho
Peerless Pump Co., Canton, Ohio
Trupar, Inc., Dayton, Ohio
Weinman Pump Mfg. Co., Columbus, Ohio
Worthington Pump & Machinery Corp., Harrison, N. J.

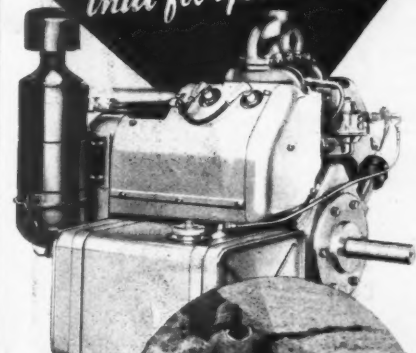
Tanks (Wood), Water Storage

W. E. Caldwell Co., Inc., Louisville, Ky.
Challenge Co., Batavia, Ill.
Dempster Mill Mfg. Co., Beatrice, Nebr.
Dunk Tank Works, Inc., Milwaukee, Wis.
Kalamazoo Tank & Silo Co., Kalamazoo, Mich.
Kaustine Co., Inc., Perry, N.Y.
Pacific Lumber Co., San Francisco, Calif.

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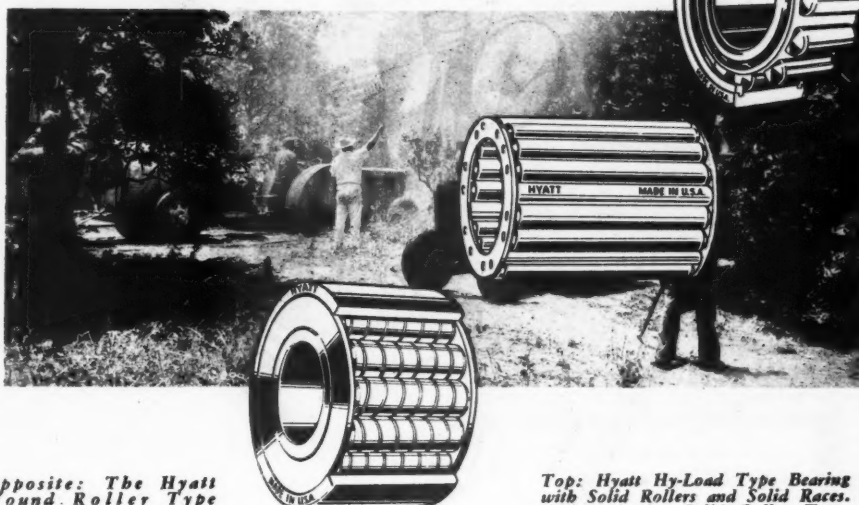
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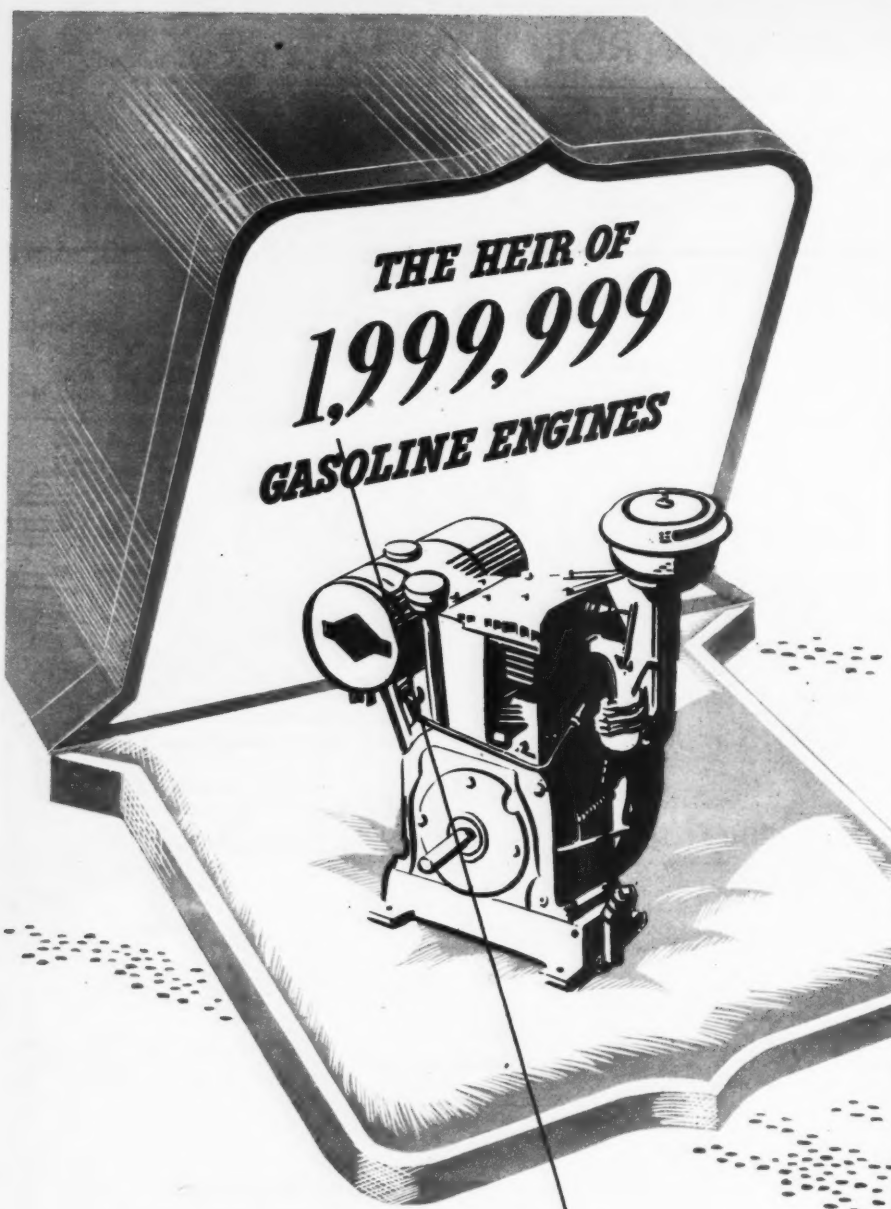
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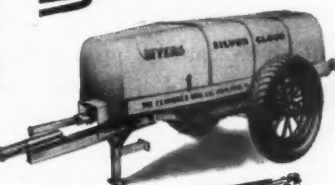


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Black Leaf 155

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 E. I. du Pont de Nemours & Co., Inc., R. & H. Chemicals Dept., Pacific Div., El Monte, Calif.
 General Chemical Co., New York, N.Y.
 James Good Co., Philadelphia, Pa.
 Gulf Refining Co., Pittsburgh, Pa.
 Hercules Powder Co., Inc., Wilmington, Del.
 John Lucas & Co., Inc., Philadelphia, Pa.
 Mechling Bros., Chemical Div. of General Chemical Co., Philadelphia, Pa.
 Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
 B. G. Pratt Co., Hackensack, N. J.
 Shell Oil Co., Inc., New York, N.Y.
 Sherwin-Williams Co., Cleveland, Ohio
 Silmo Chemical Co., Inc., Vineland, N.J.
 Socony-Vacuum Oil Co., New York, N.Y.
 Standard Agricultural Chemicals, Inc., Hoboken, N.J.
 Standard Oil Co. of Indiana, Chicago, Ill.
 Sun Oil Co., Philadelphia, Pa.
 Woolfolk Chemical Wks., Ltd., Ft. Valley, Ga.

Organic Compounds

General Chemical Co., New York, N.Y.
 E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.

DDT (Dichlorodiphenyltrichloroethane)
 Cincinnati Chemical Works, Inc., Cincinnati, Ohio

E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
 Geigy, Inc., New York, N.Y.
 Merck & Co., Rahway, N.J.
 Sherwin-Williams Co., Cleveland, Ohio

Phenothiazine

E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.

Xanthone

E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.

Paradichlorobenzene

Braun-Knecht-Heimann Co., San Francisco, Calif.
 Dow Chemical Co., Midland, Mich.
 E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
 General Chemical Co., New York, N.Y.
 Hooker Electrochemical Co., Niagara Falls, N.Y.
 Mechling Bros., Chemical Div. of General Chemical Co., Philadelphia, Pa.

Merck & Co., Inc., Rahway, N.J.
 Monsanto Chemical Co., St. Louis, Mo.
 Niagara Sprayer & Chem. Co., Inc., Middleport, N.Y.

B. G. Pratt Co., Hackensack, N. J.
 Solvay Sales Corp., New York, N.Y.
 Woolfolk Chemical Wks., Ltd., Ft. Valley, Ga.

Pyrethrum and Derivatives

Ansbacher-Siegle Corp., Brooklyn, N.Y.
 Chipman Chemical Co., Inc., Bound Brook, N.J.
 General Chemical Co., New York, N.Y.
 Kay-Fries Chemicals, Inc., New York, N.Y.
 McLaughlin Gormley King, Minneapolis, Minn.
 Mechling Bros., Chemical Div. of General Chemical Co., Philadelphia, Pa.
 S. B. Penick & Co., New York, N.Y.
 B. G. Pratt Co., Hackensack, N. J.

Rotenone Products

Agicore Laboratories, Inc., Racine, Wis.
 Agkem, Inc., Quincy, Ill.
 Ansbacher-Siegle Corp., Brooklyn, N.Y.
 Chipman Chemical Co., Inc., Bound Brook, N.J.
 E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
 General Chemical Co., New York, N.Y.
 McLaughlin Gormley King, Minneapolis, Minn.
 Mechling Bros., Chemical Div. of General Chemical Co., Philadelphia, Pa.
 Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
 S. B. Penick & Co., New York, N.Y.
 B. G. Pratt Co., Hackensack, N. J.
 Woolfolk Chemical Wks., Ltd., Ft. Valley, Ga.

Spreaders, Soaps and Stickers

American Cyanamid & Chemical Corp., Insecticide Dept., New York, N.Y.
 Ansbacher-Siegle Corp., Brooklyn, N.Y.
 Archer-Daniels-Midland Co., Minneapolis, Minn.
 California Spray-Chemical Corp., Richmond, Calif., and Elizabeth, N. J.
 Central Soya Co., Fort Wayne, Ind.
 Colloidal Products Corp., San Francisco, Calif.
 E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
 General Chemical Co., New York, N.Y.
 Glidden Co., Soya Products Div., Chicago, Ill.
 James Good Co., Philadelphia, Pa.
 Kay-Fries Chemicals, Inc., New York, N.Y.
 Mechling Bros., Chemical Div. of General Chemical Co., Philadelphia, Pa.
 National Oil Products, Harrison, N.J.
 B. G. Pratt Co., Hackensack, N. J.
 Röhm & Haas Co., Philadelphia, Pa.
 Schaeffer Bros. & Powell Mfg. Co., St. Louis, Mo.
 Sherwin-Williams Co., Cleveland, Ohio
 Silmo Chemical Co., Vineland, N.J.
 Standard Agricultural Chemicals, Inc., Hoboken, N.J.
 Wyodak Chemical Co., Cleveland, Ohio

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Saves Manpower
Saves Fruit
Saves Time

- 1 Eliminates the need for washing—less time from tree to pack.
 - 2 Costs less than other comparable oil-nicotine combinations.
 - 3 Improves fruit quality, crop and fruit sizes, health and productivity of trees by...
 - 4 Preventing foliage injury through effective control of leafhoppers, red mite, and red spiders.
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Control PEACH BORERS the safe way

● Para-Scalecide has a 12-year record of safety and effectiveness for peach borer control that is unequalled by any other method. It has been used on millions of peach trees—young and old—without a single report of injury. Para-Scalecide is not only safe—it actually has a healing effect on peach borer wounds. And it requires far less labor and time than the old crystal method.

Dilute Para-Scalecide 1 to 7 parts of water. Pour or spray against the base of the tree. Promptly throw a few shovelfuls of earth against the base to hold the fumes. No further attention is necessary.

Apply in the early Fall, before cold weather sets in, or in late Spring. One gallon treats 40 to 50 full-grown trees.

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Manufacturers of Scalecide, Para-Scalecide, Spray Catalizer, Spra-Creem, Summer Spra-Creem, D-X

Page 27 AMERICAN FRUIT GROWER, JULY, 1944



The Dipper Method with
PARA-SCALECID
 is Safe, Simple, Sure



"Is the old mare still as spry as ever?"

In the bunks below deck . . . in the foxholes . . . waiting to take off on a bombing mission . . . these are the little things he thinks about . . .

"Is the old mare still as spry as ever?" . . . "Sure could go for one of Mom's bean suppers!" . . . "Is my hammock still hanging in the orchard?"

"Little" things? Certainly. But to him these little things loom big. Because with a soldier, as with all of us it's the little things, the small familiar pleasures, that add up to Home.

It happens that to many these small pleasures may include a glass of beer occasionally—as a beverage of moderation after a hard day's work . . . enjoyed with friends or with a home-cooked meal.

A glass of beer—not of crucial importance, surely . . . yet it is little things like this that help mean home to all of us, that do so much to build morale—ours and his.



Morale is a lot of little things

INSECT AND DISEASE CONTROL

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Chipman Chemical Co., Inc., Bound Brook, N.J.
Corona Chemical Div. of Pittsburgh Plate Glass Co., Milwaukee, Wis.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
General Chemical Co., New York, N.Y.
John Lucas & Co., Inc., Philadelphia, Pa.
Mechling Bros., Chemical Div. of General Chemical Co., Philadelphia, Pa.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Sherwin-Williams Co., Cleveland, Ohio

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E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
E. I. du Pont de Nemours & Co., Inc., R. & H. Chemicals Dept., Pacific Div., El Monte, Calif.
General Chemical Co., New York, N.Y.
John Lucas & Co., Inc., Philadelphia, Pa.
Mechling Bros., Chemical Div. of General Chemical Co., Philadelphia, Pa.
Miller Products Co., Portland, Ore.
Niagara Sprayer & Chem. Co., Middleport, N.Y.
Sherwin-Williams Co., Cleveland, Ohio
Woolfolk Chemical Wks., Ltd., Ft. Valley, Ga.

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Para-dichlorobenzene has long been recommended by the U. S. Dept. of Agriculture and leading fruit growers as a *proven* killer of the peach tree borer. It destroys the borer's larvae without harm to the tree . . . is easy to apply . . . requires no special equipment . . . no mixing! Write immediately for complete information on

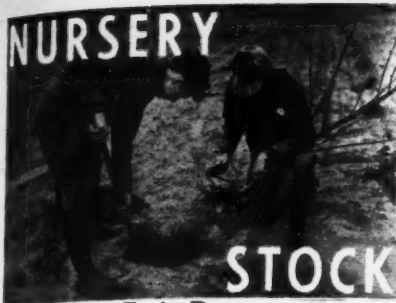
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Chipman Chemical Co., Inc., Bound Brook, N.J.
Corona Chemical Div. of Pittsburgh Plate Glass Co., Milwaukee, Wis.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
E. I. du Pont de Nemours & Co., Inc., R. & H. Chemicals Dept., Pacific Div., El Monte, Calif.
General Chemical Co., New York, N.Y.
Koppers Products Co., Pittsburgh, Pa.
Mechling Bros., Chemical Div. of General Chemical Co., Philadelphia, Pa.
Micronizer Processing Co., Inc., Moorestown, N.J.
National Sulphur Co., Inc., New York, N.Y.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Sherwin-Williams Co., Cleveland, Ohio
Stauffer Chemical Co., New York, N.Y.
Tennessee Corp., Atlanta, Ga.
Woolfolk Chemical Wks., Ltd., Ft. Valley, Ga.

Zinc Sulphate

Braun-Knecht-Heimann Co., San Francisco, Calif.
Brooklyne Chemical Co., Baltimore, Md.
Eagle-Picher Sales Co., Cincinnati, Ohio
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
Glidden Co., Cleveland, Ohio
Sherwin-Williams Co., Cleveland, Ohio
Tennessee Corp., Atlanta, Ga.
Virginia Smelting Co., West Norfolk, Va.
Woolfolk Chemical Wks., Ltd., Ft. Valley, Ga.



Fruit Trees

Ackerman Nursery, Bridgman, Mich.
Allen's Nurseries & Seed House, Geneva, Ohio
Andrews Nursery Co., Faribault, Minn.
Armstrong Nurseries, Ontario, Calif.
O. A. D. Baldwin Nursery, Bridgman, Mich.
Benton County Nursery Co., Rogers, Ark.
W. A. Bents Nurseries, Cresco, Iowa
Berhow Nurseries, Huxley, Iowa
Bountiful Ridge Nurseries, Princess Anne, Md.
Bradley Brothers, Carbondale, Ill.
Bridgman Nursery Co., Bridgman, Mich.
Buntings' Nurseries, Inc., Selbyville, Del.
C. R. Burr & Co., Manchester, Conn.
California Nursery Co., Niles, Calif.
Call's Nurseries, Perry, Ohio
Champion Nurseries, Perry, Ohio
Chase Brothers Co., Geneva, N.Y.
Chattanooga Nurseries, Chattanooga, Tenn.
Cole Nursery Co., Painesville, Ohio
Columbia & Okanogan Nursery Co., Wenatchee, Wash.
Condon Bros. Seedsmen, Rockford, Ill.
Cumberland Valley Nurseries, Inc., McMinnville, Tenn.
Daniels Nursery, Inc., Long Lake, Minn.
Emlong's Nursery, Stevensville, Mich.
Grand Island Nurseries, Eustis, Fla.
Greening Nursery Co., Monroe, Mich.
Carl A. Hansen Nursery, Brookings, S.D.
Harrison's Nurseries, Berlin, Md.
Hill Top Orchard & Nurseries, Hartford, Mich.
I. E. Ilgenfritz' Sons Co., Monroe, Mich.
E. W. Jones Nursery Co., Woodlawn, Va.
J. F. Jones Nurseries, Lancaster, Pa.
R. M. Kellogg Co., Three Rivers, Mich.
Kelly Bros. Nurseries, Danville, N.Y.
Kridner Nurseries, Inc., Middlebury, Ind.
Lake's Shenandoah Nurseries, Shenandoah, Ia.
Maloney Bros. Nursery Co., Danville, N.Y.
Markham's Nursery, Xenia, Ill.
Thomas B. Meehan Co., Dresher, Pa.
Milton Nursery Co., Milton, Ore.
George A. Morse, Williamson, N.Y.
Mount Arbor Nurseries, Shenandoah, Iowa
New Jersey Peach Council, Princeton, N.J.
Nut Tree Nurseries, Downingtown, Pa.
Rokely & Son, Bridgman, Mich.
W. N. Scarff's Sons, New Carlisle, Ohio
South Michigan Nursery, New Buffalo, Mich.
F. C. Stahelin & Son, Bridgman, Mich.
Stark Bros.' Nurseries & Orchards Co., Louisiana, Mo.
Storrs & Harrison, Painesville, Ohio
E. W. Townsend Sons, Salisbury, Md.
Vienna Nursery, Vienna, Ill.
Wathens Nurseries, Wathens, Kans.
Waynesboro Nurseries, Waynesboro, Va.
T. B. West & Son, Perry, Ohio
West Hill Nurseries, Fredonia, N.Y.
White Rose Seed & Nursery Co., York, Pa.
Zilke Nursery, Baroda, Mich.

Fruit Trees; Dwarf

Kelly Bros. Nurseries, Danville, N.Y.
Henry Leuthardt, Port Chester, N.Y.
Maloney Bros. Nursery Co., Danville, N.Y.
W. N. Scarff's Sons, New Carlisle, Ohio
U. S. Espalier Nursery Co., Inc., Portland, Ore.
T. B. West & Son, Perry, Ohio

Rootstock Material

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Greening Nursery Co., Monroe, Mich.
House of Gurney, Inc., Yankton, S.D.
Mount Arbor Nurseries, Shenandoah, Iowa
Virginia Tree Farms, Woodlawn, Va.
A. Willis & Co., Ottawa, Kans.

Small Fruits and Grape Vines

Ackerman Nursery, Bridgman, Mich.
W. F. Allen Co., Salisbury, Md.
Allen's Nurseries & Seed House, Geneva, Ohio
Andrews Nursery Co., Faribault, Minn.
Anna Strawberry Nursery, Anna, Ill.
O. A. D. Baldwin Nursery, Bridgman, Mich.
V. F. Basham, Mount Auburn, Ark.
Benton County Nursery Co., Rogers, Ark.
W. A. Bents Nurseries, Cresco, Iowa
Bountiful Ridge Nurseries, Princess Anne, Md.
Boysenberry Plantation, Lapeer, Mich.
Fred Braden, Wayzata, Minn.
Bradley Bros., Carbondale, Ill.
Brunes, Charles, Pequot Lakes, Minn.
Buntings' Nurseries, Inc., Selbyville, Del.
Burr Nurseries, Manchester, Conn.
California Nursery Co., Niles, Calif.
Call's Nurseries, Perry, Ohio
Champion Nurseries, Perry, Ohio
Chattanooga Nurseries, Chattanooga, Tenn.
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Now come amazing improvements in fruits. Revolutionary fruits which bear younger and more abundantly than ordinary unimproved varieties are now available to help relieve alarming fruit shortage. Thousands of farmers and city folks alike are planting these new fruits—so hardy and superior that almost anyone can expect success with reasonable care.

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Dunham's Grand Mere Nurseries, Baroda, Mich.

Emlong's Nursery, Stevensville, Mich.

L. J. Farmer, Pulaski, N.Y.

Fish & Bond, Eugene, Ore.

Franklin County Nurseries, Greenfield, Mass.

F. A. Guernsey & Co., Inc., Schoharie, N.Y.

W. Halbert, Oxford, N.Y.

Carl A. Hansen Nursery, Brookings, S.D.

Harrison's Nurseries, Berlin, Md.

Fred Hazelton, LeRoy, N.Y.

Hill Top Orchards & Nurseries, Hartford, Mich.

R. M. Kellogg Co., Three Rivers, Mich.

Kelly Bros. Nurseries, Danville, N.Y.

John Lightfoot, Birchwood, Tenn.

Maloney Bros. Nursery Co., Inc., Danville, N.Y.

Markham's Nursery, Xenia, Ill.

R. R. McUmbert, Greenfield, Tenn.

J. E. Miller Grape Nursery, Naples, N.Y.

George A. Morse, Williamson, N.Y.

Perkins Bros., St. Paul, Minn.

Rider Nursery, Farmington, Iowa.

Rayner Bros., Salisbury, Md.

E. L. Russell, Jonesville, Va.

W. N. Scarff's Sons, New Carlisle, Ohio

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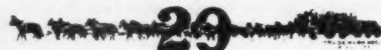
Celotex Corp., Chicago, Ill.
Marble Cliff Quarries Co., Columbus, Ohio
National Gypsum Co., Buffalo, N. Y.
Ohio Hydrate & Supply Co., Woodville, Ohio
Scioto Lime & Stone Co., Delaware, Ohio
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Stauffer Chemical Co., New York, N.Y.

CALCIUM CYANAMID

American Cyanamid Co., Fertilizer Div., New York, N.Y.

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Synthetic Nitrogen Prod. Corp., New York, N.Y.

GYPSUM

Celotex Corp., Chicago, Ill.
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Armour Fertilizer Works, Atlanta, Ga.
Braun-Knecht-Heimann Co., San Francisco, Calif.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Inc., Grasselli Chemicals Dept., Wilmington, Del.
General Chemical Co., New York, N.Y.
James Good Co., Philadelphia, Pa.
Mallinckrodt Chemical Works, St. Louis, Mo.

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Baker Chemical Co., Phillipsburg, N.J.
Braun-Knecht-Heimann Co., San Francisco, Calif.
Carus Chemical Co., La Salle, Ill.
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Harshaw Chemical Co., Cleveland, Ohio
Mallinckrodt Chemical Wks., St. Louis, Mo.
Merck & Co., Inc., Rahway, N.J.
Miller Chemical & Fertilizer Corp., Baltimore, Md.
Tennessee Corp., Atlanta, Ga.
Van Waters & Rogers, Inc., Portland, Ore.
Otto F. Wisner & Co., San Francisco, Calif.

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American Agricultural Chem. Co., New York, N.Y.
Armour Fertilizer Works, Atlanta, Ga.
Davison Chemical Corp., Baltimore, Md.
Federal Chemical Co., Louisville, Ky.
International Minerals & Chem. Corp., Chicago, Ill.
Jean Maclean, Bridgeton, Ind.
Miller Chemical & Fertilizer Corp., Baltimore, Md.
Standard Wholesale Phosphate & Acid Works, Inc., Baltimore, Md.
Summers Fertilizer Co., Baltimore, Md.
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Wellmaid Mfg. Co., Chicago, Ill.
Wilson & Co., Chicago, Ill.
Woodville Lime Products Co., Toledo, Ohio

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Armour Fertilizer Works, Atlanta, Ga.
Barrett Div., Allied Chemical & Dye Corp., New York, N.Y.
Chilean Nitrate Sales Corp., New York, N.Y.

Miller Chemical & Fertilizer Corp., Baltimore, Md.
Smith Agricultural Chemical Co., Columbus, Ohio
Standard Wholesale Phosphate & Acid Works, Inc., Baltimore, Md.
Summers Fertilizer Co., Baltimore, Md.

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International Minerals & Chem. Corp., Chicago, Ill.
Potash Co. of America, New York, N.Y.
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United States Potash Co., New York, N.Y.

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Armour Fertilizer Works, Atlanta, Ga.
Barrett Div., Allied Chemical & Dye Corp., New York, N.Y.
Miller Chemical & Fertilizer Corp., Baltimore, Md.
Smith Agricultural Chemical Co., Columbus, Ohio

SULPHUR

Miller Chemical & Fertilizer Corp., Baltimore, Md.
National Sulphur Co., Inc., New York, N.Y.
Niagara Sprayer & Chemical Co., Inc., Middleport, N.Y.
Stauffer Chemical Co., New York, N.Y.
Woolfolk Chemical Works, Ltd., Ft. Valley, Ga.

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American Agricultural Chemical Co., New York, N.Y.
Armour Fertilizer Works, Atlanta, Ga.
Davison Chemical Co., Baltimore, Md.
Farmers Fertilizer Co., Columbus, Ohio
Federal Chemical Co., Louisville, Ky.
International Agricultural Chemical Co., New York, N.Y.
Miller Chemical & Fertilizer Corp., Baltimore, Md.
Smith Agricultural Chemical Co., Columbus, Ohio
Standard Wholesale Phosphate & Acid Works, Inc., Baltimore, Md.
Summers Fertilizer Co., Inc., Baltimore, Md.
Tennessee Corp., Atlanta, Ga.

UREA

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Albert Dickinson Co., Chicago, Ill.
Jean Maclean, Bridgeton, Ind.
Nitragin Co., Milwaukee, Wis.
Urbana Laboratories, Urbana, Ill.
Wellmaid Mfg. Co., Chicago, Ill.

Mesh Fabric, Soil Retention

Bemis Bro. Bag Co., St. Louis, Mo.

Peat Moss

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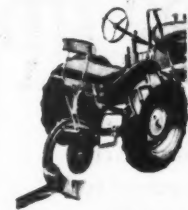
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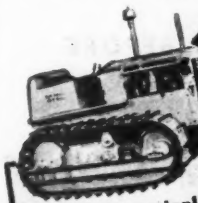
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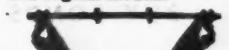
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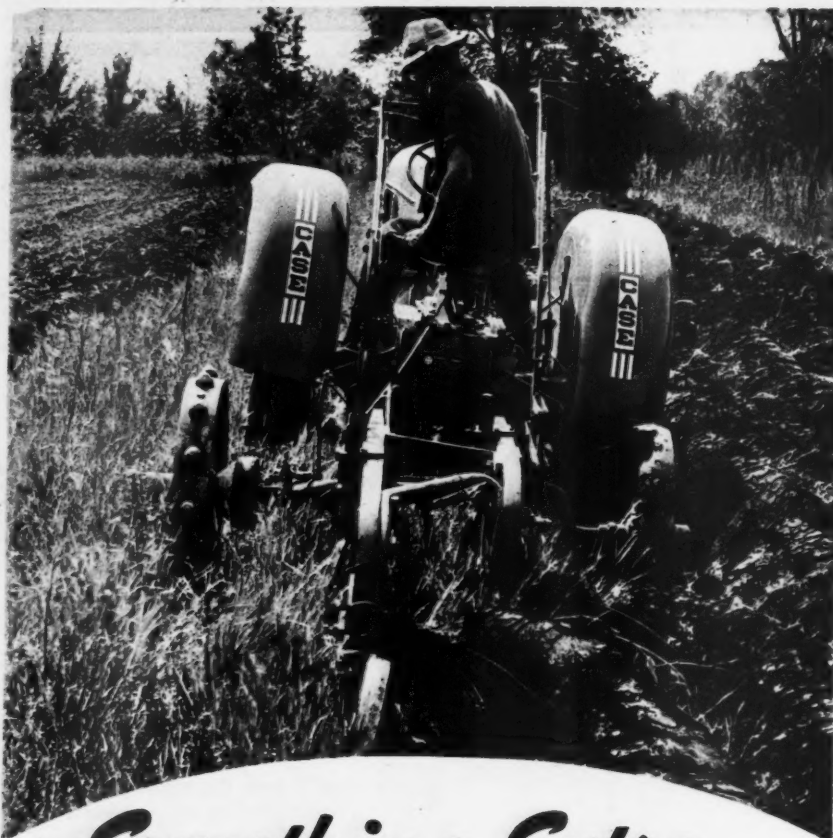
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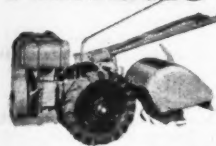
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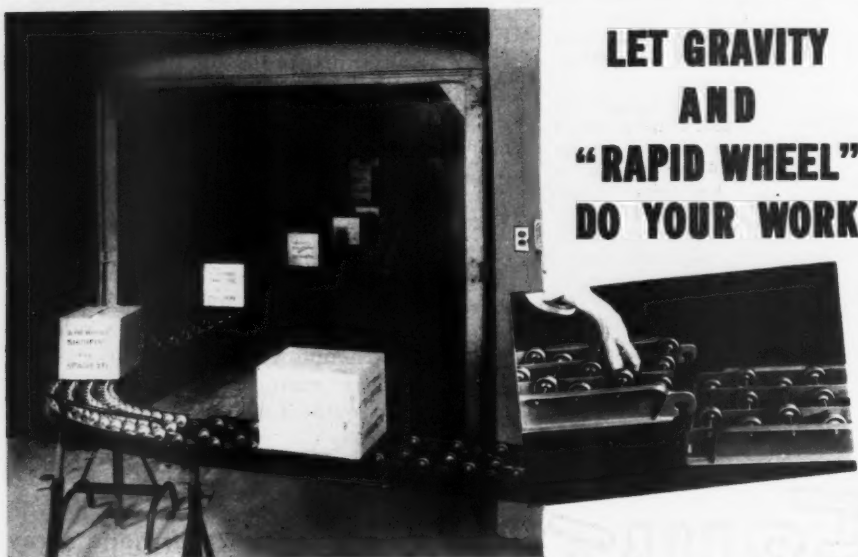
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Dunkley Co., Kalamazoo, Mich.
Rollman Mfg. Co., Mt. Joy, Pa.
L. K. Vaughan, Woodland, Calif.

Sulphur Dioxide

Braun-Knecht-Heimann-Co., San Francisco, Calif.
E. I. du Pont de Nemours & Co., Inc., Gracelli Chemicals Dept., Wilmington, Del.
Virginia Smelting Co., West Norfolk, Va.

DEHYDRATING

Bleaching Materials

National Sulphur Co., Inc., New York, N. Y.
Stauffer Chemical Co., New York, N. Y.
Virginia Smelting Co., West Norfolk, Va.

Dehydrators

J. P. Devine Mfg. Co., Mt. Vernon, Ill.
E. H. Guthrie & Co., Santa Ana, Calif.
L. N. Miller Dehydrating Co., Eugene, Ore.
Moore Dry Kiln Co., No. Portland, Ore.
Proctor & Schwartz, Inc., Philadelphia, Pa.

Evaporators

Buffalo Foundry & Machine Co., Buffalo, N. Y.
J. P. Devine Mfg. Co., Mount Vernon, Ill.
Stokes Machine Co., Philadelphia, Pa.
Pfaudler Co., Rochester, N. Y.

JUICE EXTRACTING

Caps and Closures

Armstrong Cork Co., Lancaster, Pa.
Ball Bros. Co., Muncie, Ind.
Crown Cork & Seal Co., Baltimore, Md.
Cupples Co., St. Louis, Mo.
Hazel-Atlas Glass Co., Wheeling, W. Va.
Kerr Glass Mfg. Corp., Sand Springs, Okla.
Owens-Illinois Glass Co., Toledo, Ohio
Phoenix Metal Cap Co., Chicago, Ill.

Extractors, Juice

Burns Mfg. Co., Syracuse, N. Y.
Enterprise Mfg. Co., Philadelphia, Pa.
L. O. Koven & Bro., Inc., Jersey City, N. J.
F. H. Langsenkamp Co., Indianapolis, Ind.
New Standard Corp., Mt. Joy, Pa.

Filters, Fruit Juice

Cuno Engineering Co., Meriden, Conn.
Food Machinery Corp., Anderson-Barngrover Div., San Jose, Calif.
Hydraulic Press Mfg. Co., Mt. Gilead, Ohio
Johns-Manville Corp., New York, N. Y.
Oliver United Filters, Inc., New York, N. Y.
Palmer Bros., Cos Cob, Conn.
Republic Filters, Inc., New York, N. Y.
Scientific Filter Co., New York, N. Y.

Graters

A. B. Farquhar Co., Ltd., York, Pa.
Hamilton Metal Products Co., Hamilton, Ohio
Hydraulic Press Mfg. Co., Mt. Gilead, Ohio
New Jersey Agricultural Works, Trenton, N. J.
Palmer Bros., Cos Cob, Conn.
Thomas-Albright Co., Goshen, Ind.

Grinders

A. B. Farquhar Co., Ltd., York, Pa.
Food Machinery Corp., Anderson-Barngrover Div., San Jose, Calif.
Hydraulic Press Mfg. Co., Mt. Gilead, Ohio
New Jersey Agricultural Works, Trenton, N. J.
Palmer Bros., Cos Cob, Conn.
Papee Machine Co., Shortsville, N. Y.
J. B. Sedberry, Inc., Utica, N. Y.
Thomas-Albright Co., Goshen, Ind.

Pasteurizing Outfits

Food Machinery Corp., Anderson-Barngrover Div., San Jose, Calif.
Glascote Products, Inc., Cleveland, Ohio
Pfaudler Co., Rochester, N. Y.

Presses, Fruit

Cutaway Harrow Co., Higganum, Conn.
Enterprise Mfg. Co., Philadelphia, Pa.
A. B. Farquhar Co., Ltd., York, Pa.
Food Machinery Corp., Anderson-Barngrover Div., San Jose, Calif.
Hydraulic Press Mfg. Co., Mt. Gilead, Ohio
New Jersey Agricultural Works, Trenton, N. J.
Palmer Bros., Cos Cob, Conn.
Thomas-Albright Co., Goshen, Ind.

Racks and Strainers, Fruit Juice

A. B. Farquhar Co., Ltd., York, Pa.
Hydraulic Press Mfg. Co., Mt. Gilead, Ohio
New Jersey Agricultural Works, Trenton, N. J.
Palmer Bros., Cos Cob, Conn.
Thomas-Albright Co., Goshen, Ind.

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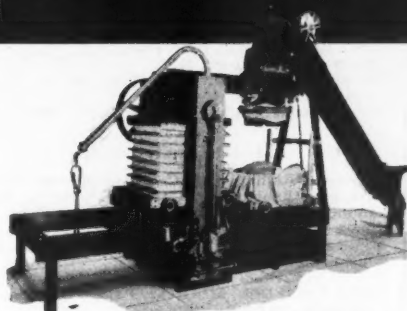
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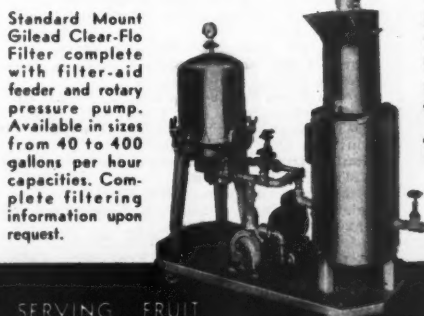
Sodium Benzoate

Carus Chemical Co., Inc., La Salle, Ill.
Dow Chemical Co., Midland, Mich.
Heyden Chemical Corp., New York, N. Y.
Hooker Electro Chem. Co., Niagara Falls, N. Y.
Mallinckrodt Chemical Works, St. Louis, Mo.
Monsanto Chemical Co., St. Louis, Mo.
Seydel Chemical Co., Jersey City, N. J.

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New Apple Graders. Priced for Quick Sale. Write HAM-
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Celotex Corp., Chicago, Ill.
Certain-Teed Products Corp., Chicago, Ill.
Flintkote Co., Inc., New York, N.Y.
Johns-Manville Corp., New York, N.Y.
Masonite Corp., Chicago, Ill.
Paraffine Companies, Inc., San Francisco, Calif.
Red Cedar Shingle Bureau, Seattle, Wash.
Republic Steel Corp., Cleveland, Ohio
Ruberoid Co., New York, N.Y.
U. S. Gypsum Co., Chicago, Ill.
Weyerhaeuser Sales Co., St. Paul, Minn.

STEEL

American Rolling Mill Co., Middletown, Ohio
Bethlehem Steel Corp., Bethlehem, Pa.
Brown Fence & Wire Co., Cleveland, Ohio
Carnegie-Illinois Steel Corp., Pittsburgh, Pa.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Minneapolis-Moline Power Implement Co., Min-
neapolis, Minn.
Pittsburgh Steel Co., Pittsburgh, Pa.
Republic Steel Corp., Cleveland, Ohio
Tennessee Coal, Iron & R.R. Co., Birmingham,
Ala.
Wheeling Steel Corp., Wheeling, W. Va.

Building Materials

Barrett Div., Allied Chemical & Dye Corp.,
New York, N.Y.
Celotex Corp., Chicago, Ill.
Creo-Dipt Co., Inc., N. Tonawanda, N. Y.
Certain-Teed Products Corp., Chicago, Ill.
Delco-Remy Div., General Motors Corp., Ander-
son, Ind.
Detroit Steel Products Co., Detroit, Mich.
General Electric Co., Bridgeport, Conn.
Harris Bros. Co., Chicago, Ill.
International Nickel Co., Inc., New York, N.Y.
Johns-Manville Corp., New York, N.Y.
Libbey-Owens-Ford Glass Co., Toledo, Ohio
National Gypsum Co., Buffalo, N. Y.
Pacific Lumber Co., San Francisco, Calif.
Paraffine Companies, Inc., San Francisco, Calif.
Pittsburgh Plate Glass Co., Pittsburgh, Pa.
Pittsburgh Steel Co., Pittsburgh, Pa.
Portland Cement Association, Chicago, Ill.
Rutland Fire Clay Co., Rutland, Vt.
United States Gypsum Co., Chicago, Ill.
U. S. Plywood Corp., New York, N.Y.
Upson Co., Lockport, N.Y.
Westinghouse Electric & Mfg. Co., E. Pitts-
burgh, Pa.
Weyerhaeuser Sales Co., St. Paul, Minn.

Steel Construction

American Rolling Mill Co., Middletown, Ohio
Carnegie-Illinois Steel Corp., Pittsburgh, Pa.
Columbian & Steel Tank Co., Kansas City, Mo.
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
Minneapolis-Moline Power Implement Co., Min-
neapolis, Minn.
Pittsburgh Steel Co., Pittsburgh, Pa.
Stran-Steel Div. of Great Lakes Steel Corp.,
Detroit, Mich.
Truscon Steel Co., Youngstown, Ohio
Youngstown Press Steel Co., Warren, Ohio

Insulation

Armstrong Cork Co., Lancaster, Pa.
Barrett Div. Allied Chemical & Dye Corp., New
York, N.Y.
Bird & Son, Inc., East Walpole, Mass.
Brown Fence & Wire Co., Cleveland, Ohio
Celotex Corp., Chicago, Ill.
Certain-Teed Products Corp., Chicago, Ill.
Eagle-Picher Sales Co., Cincinnati, Ohio.
Fir-Tek Insulation Board Co., Portland, Ore.
Flintkote Co., New York, N.Y.
Insulite Div. of Minnesota & Ontario Paper Co.,
Minneapolis, Minn.
Johns-Manville Corp., New York, N.Y.
Kalamazoo Tank & Silo Co., Kalamazoo, Mich.
Masonite Corp., Chicago, Ill.
National Gypsum Co., Buffalo, N. Y.
Pacific Lumber Co., San Francisco, Calif.
Ruberoid Co., New York, N.Y.
U. S. Gypsum Co., Chicago, Ill.
Universal Zonolite Insulation Co., Chicago, Ill.
Wood Conversion Co., St. Paul, Minn.

Flooring

Armstrong Cork Co., Lancaster, Pa.
Congoleum-Nairn Inc., Kearny, N.J.
Hachmeister-Lind Co., Pittsburgh, Pa.
Johns-Manville Corp., New York, N.Y.
Paraffine Companies, Inc., San Francisco, Calif.
Ruberoid Co., New York, N.Y.

Plumbing Fixtures

American Radiator & Standard Sanitary Corp.,
Pittsburgh, Pa.
C. F. Church Mfg. Co., Holyoke, Mass.
Kaustine Co., Inc., Perry, N.Y.
Kohler Co., Kohler, Wis.
Thos. Maddock's Sons Co., Trenton, N.J.
Universal Sanitary Mfg. Co., New Castle, Pa.

Ready-Cut Houses

Aladdin Co., Bay City, Mich.
Gordon Van Tine Co., Davenport, Iowa
E. F. Hodgson Co., Boston, Mass.
Texas Prefabricated Housing Co., Dallas, Texas

Paints, Varnishes & Enamels

Aluminum Co. of America, Pittsburgh, Pa.
American Chemical Paint Co., Ambler, Pa.
Brown Fence & Wire Co., Cleveland, Ohio
Cook Paint & Varnish Co., Kansas City, Mo.
DuPont de Nemours & Co., Inc., Wilmington,
Del.
Devco & Reynolds Co., Inc., New York, N.Y.
Eagle-Picher Lead Co., Cincinnati, Ohio
Glidden Co., Cleveland, Ohio
Martin Varnish Co., Chicago, Ill.
John McQuade & Co., Inc., Brooklyn, N. Y.
National Gypsum Co., Buffalo, N. Y.
National Lead Co., New York, N.Y.
New Jersey Zinc Co., New York, N.Y.
Paraffine Companies, Inc., San Francisco, Calif.
Pittsburgh Plate Glass Co., Pittsburgh, Pa.
Sherwin-Williams Co., Cleveland, Ohio
United States Gypsum Co., Chicago, Ill.

FROST PROTECTION

Engines

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Briggs & Stratton Corp., Milwaukee, Wis.
Caterpillar Tractor Co., Peoria, Ill.
Continental Motors Corp., Detroit, Mich.
John Deere, Moline, Ill.
Fairbanks, Morse & Co., Chicago, Ill.
Frick Co., Inc., Waynesboro, Pa.
Hercules Motor Co., Canton, Ohio
International Harvester Co., Chicago, Ill.
Minneapolis-Moline Power Implement Co., Min-
neapolis, Minn.
Waukesha Motor Co., Waukesha, Wis.
Wisconsin Motor Corp., Milwaukee, Wis.
Witte Engine Works, Inc., Kansas City, Mo.

Indicators, Frost Alarm

W. R. Ames Co., San Francisco, Calif.
Taylor Instrument Co., Rochester, N.Y.
Thwing Instrument Co., Philadelphia, Pa.

Motors, Electric

Allis-Chalmers Mfg. Co., Milwaukee, Wis.
Fairbanks, Morse & Co., Chicago, Ill.
General Electric Co., Schenectady, N.Y.
Westinghouse Electric & Mfg. Co., Pittsburgh,
Pa.

Orchard Heaters

American Can Co., New York, N.Y.
W. R. Ames Co., San Francisco, Calif.
Anderson Incinerator Works, Chicago, Ill.
California Orchard Heater Co., Pomona, Calif.
Kittle Mfg. Co., Los Angeles, Calif.
National-Riverside Co., Riverside, Calif.
Scheu Products Co., Ltd., Upland, Calif.

Torches, Lighting

W. R. Ames Co., San Francisco, Calif.

Wind Machines

Conveyor Co., Inc., Huntington Park, Calif.
Towt Co., Glendale, Calif.

TRANSPORTATION EQUIPMENT AND SUPPLIES



AUTOMOBILES AND TRUCKS

Automobiles

Buick Motor Div., General Motors Corp., Flint, Mich.
Chevrolet Motor Div., General Motors Corp., Detroit, Mich.
Dodge Div., Chrysler Corp., Detroit, Mich.
Ford Motor Co., Dearborn, Mich.
General Motors Corp., Detroit, Mich.
Hudson Motor Car Co., Detroit, Mich.
Nash-Kelvinator Corp., Detroit, Mich.
Oldsmobile Div., General Motors Corp., Lansing, Mich.
Plymouth Motor Corp., Chrysler Corp., Detroit, Mich.
Pontiac Motor Div., General Motors Corp., Pontiac, Mich.
Studebaker Corp., South Bend, Ind.
Willys-Overland Motors, Inc., Toledo, Ohio

Trucks

Chevrolet Motor Div., General Motors Corp., Detroit, Mich.
Chrysler Corp., Dodge Div., Detroit, Mich.
Chrysler Corp., Plymouth Div., Detroit, Mich.
Diamond T Motor Car Co., Chicago, Ill.
Dodge Div., Chrysler Corp., Detroit, Mich.
Ford Motor Co., Dearborn, Mich.
General Motors Corp., Chevrolet Motor Div., Detroit, Mich.
General Motors Truck & Coach Div., Yellow Truck & Coach Mfg. Co., Pontiac, Mich.
Hudson Motor Car Co., Detroit, Mich.
International Harvester Co., Chicago, Ill.
Plymouth Div., Chrysler Corp., Detroit, Mich.
Studebaker Corp., South Bend, Ind.
White Motor Co., Cleveland, Ohio
Willys-Overland Co., Toledo, Ohio

AUTOMOTIVE ACCESSORIES

Automotive Parts & Equipment

Borg-Warner Corp., Chicago, Ill.
Briggs & Stratton Corp., Milwaukee, Wis.
Continental Motors Corp., Muskegon, Mich.
Delco Products Div., General Motors Corp., Dayton, Ohio
Delco-Remy Div., General Motors Corp., Anderson, Ind.
Fisher Body Div., General Motors Corp., Detroit, Mich.
Johns-Manville Corp., New York, N. Y.
Motor Wheel Corp., Lansing, Mich.
Purrolator Products, Inc., Newark, N. J.
Raybestos Div., Raybestos-Manhattan, Inc., Stamford, Conn.
Sealed Power Corp., Muskegon, Mich.
Stewart-Warner Corp., Chicago, Ill.
United Motors Service, Inc., Detroit, Mich.
Wisconsin Motor Co., Milwaukee, Wis.

Anti-Freeze

Carbide & Carbon Chemicals Corp., New York, N. Y.
Commercial Solvents Corp., New York, N. Y.
Firestone Tire & Rubber Co., Akron, Ohio
National Carbon Co., Inc., New York, N. Y.

Batteries

Auto-Lite Battery Corp., Toledo, Ohio
Delco-Remy Div., General Motors Corp., Anderson, Ind.
Thomas A. Edison, Inc., West Orange, N. J.
Electric Storage Battery Co., Philadelphia, Pa.
Firestone Tire & Rubber Co., Akron, Ohio
National Battery Co., St. Paul, Minn.
Prest-O-Lite Battery Co., Inc., Indianapolis, Ind.
Willard Storage Battery Co., Cleveland, Ohio

Bearings

Hyatt Bearings Div., General Motors Corp., Harrison, N. J.
New Departure Mfg. Co., Bristol, Conn.
SKF Industries, Inc., Philadelphia, Pa.
Timken Roller Bearing Co., Canton, Ohio

Chains

American Chain Div., American Chain & Cable Co., Bridgeton, Conn.
Columbus-McKinnon Chain Co., Tonawanda, N. Y.

Pistons & Piston Rings

Aluminum Co. of America, Pittsburgh, Pa.
Hastings Mfg. Co., Hastings, Mich.
Perfect Circle Co., Hagerstown, Ind.
Sealed Power Corp., Muskegon, Mich.
Wilkening Mfg. Co., Philadelphia, Pa.

Spark Plugs

A. C. Spark Plug Div., General Motors Corp., Flint, Mich.
Champion Spark Plug Co., Toledo, Ohio
Electric Auto-Lite Co., Toledo, Ohio
Firestone Tire & Rubber Co., Akron, Ohio

Gasoline and Lubricants

American Oil Co., Baltimore, Md.
Cities Service Co., New York, N. Y.
Continental Oil Co., Ponca City, Okla.
Ethyl Corp., New York, N. Y.
Gulf Oil Corp., Pittsburgh, Pa.
Kendall Refining Co., Bradford, Pa.
National Refining Co., Cleveland, Ohio
Pennsylvania Grade Crude Oil Assoc., Oil City, Pa.
Pennzoil Co., Oil City, Pa.
Quaker State Oil Refining Corp., Oil City, Pa.
Shell Oil Co., Inc., New York, N. Y.
Sinclair Refining Co., New York, N. Y.
Socony-Vacuum Oil Co., Inc., New York, N. Y.
Standard Oil Co., New York, N. Y.
Texas Co., New York, N. Y.
Tide Water Associated Oil Co., New York, N. Y.
Valvoline Oil Co., Cincinnati, Ohio
Wolf's Head Oil Refining Co., New York, N. Y.

Radiator Cleaners

Hygienic Products Co., Canton, Ohio

Tires and Tubes

Firestone Tire & Rubber Co., Akron, Ohio
Fisk Tire Plant Division of U. S. Tire Dealers Corp., Chicopee Falls, Mass.
General Tire & Rubber Co., Akron, Ohio
Gillette Rubber Co., Eau Claire, Wis.
B. F. Goodrich Co., Akron, Ohio
Goodyear Tire & Rubber Co., Inc., Akron, Ohio
Kelly-Springfield Tire Co., Cumberland, Md.
Lee Tire & Rubber Corp., Conshohocken, Pa.
Pennsylvania Rubber Co., Jeanette, Pa.
Seiberling Rubber Co., Akron, Ohio
United States Rubber Co., New York, N. Y.

Tire Pumps and Accessories

ADAPTERS

Firestone Tire & Rubber Co., Akron, Ohio
Goodyear Tire & Rubber Co., Inc., Akron, Ohio
F. E. Myers & Bro. Co., Ashland, Ohio

CALCIUM CHLORIDE

American Cyanamid & Chemical Corp., New York, N. Y.
Braun-Knecht-Heimann-Co., San Francisco, Calif.
Dow Chemical Co., Midland, Mich.
E. I. du Pont de Nemours & Co., Inc., Gracelli Chemicals Dept., Wilmington, Del.
Mallinckrodt Chemical Works, St. Louis, Mo.
Merck & Co., Inc., Rahway, N. J.
Pennsylvania Salt Mfg. Co., Philadelphia, Pa.
Solvay Sales Corp., New York, N. Y.
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Texas Co., New York, N. Y.

GAUGES, LOW PRESSURE

Drugs Bros. Mfg. Co., Oakland, Calif.
Improved Gauge Mfg. Co., Syracuse, N. Y.
Moto Meter Gauge & Equip. Corp., Toledo, Ohio
Pierce, Butler & Pierce Mfg. Corp., New York, N. Y.

A. Schrader's Son Div., Brooklyn, N. Y.
Service Station Equip. Co., Conshohocken, Pa.

PUMP, AIR

John Deere, Moline, Ill.

Trailers

Ben Hur Trailer Div. Lavine Gear Co., Milwaukee, Wis.
Electric Wheel Co., Quincy, Ill.
Karl Kuemmerling, Canton, Ohio
Mullins Mfg. Co., Salem, Ohio



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Baltimore & Ohio Railroad, Baltimore, Md.
Boston and Albany Railroad, Boston, Mass.
Boston & Maine Railroad, Boston, Mass.
Chesapeake & Ohio Railway Co., Cleveland, Ohio
Chicago, Milwaukee, St. Paul & Pacific Railroad, Chicago, Ill.
Chicago, Rock Island & Pacific Railway Co., Chicago, Ill.
Chicago and North Western Railway, Chicago, Ill.
Erie Railroad Co., Cleveland, Ohio
Great Northern Railway Co., St. Paul, Minn.
Illinois Central Railroad Co., Chicago, Ill.
Louisville & Nashville Railroad Co., Louisville, Ky.
Missouri Pacific Lines, St. Louis, Mo.
New York Central System, New York, N. Y.
Norfolk and Western Railway Co., Roanoke, Va.
Pacific Fruit Express Co., San Francisco, Calif.
Pennsylvania Railroad, Philadelphia, Pa.
Railway Express Agency, Inc., New York, N. Y.
Seaboard Railway, Norfolk, Va.
Southern Railway System, Washington, D. C.
Union Pacific Railroad, Omaha, Nebr.

Steamship Lines

American President Lines, San Francisco, Calif.
Anchor Line, Ltd., New York, N. Y.
Clyde-Mallory Lines, New York, N. Y.
Eastern Steamship Lines, Inc., Boston, Mass.
Grace Line, Inc., New York, N. Y.
Matson Navigation Co., San Francisco, Calif.

EDITORIAL PAGE



Fruit for China's Millions

FRUIT is one of the leading products in the huge potential increase of American exports after the war. If devastated European orchards encourage exports from Atlantic ports, the uncounted millions in Asia hold a similar lure for fruit growing areas whose natural outlets are on the Pacific.

The populations of Japan, China, and the semi-Chinese peoples to the south number more than 600 millions.

Although many varieties of fruit originated in China, the vast majority of these submerged masses eat little fruit. They can't afford to grow or buy it.

It is our present policy, however, to assist in Chinese development both to provide a balance of power to replace Japan in the Far East and an export market for surplus American products.

Since our Pacific coast can grow far more fruit than that area can consume, or than it is economical to market in the East, Asia provides a fabulous potential market. Especially is this true of the huge Columbia basin. Here land available for irrigation can produce an unlimited quantity of fruit, while only 4000 miles away from the port of Seattle is a potential market too great for estimate.

The problem is to bring this unlimited production and consumption together.

In the first place, marketing must be done cheaply. Oregon and Washington can produce fruit cheaply, especially apples, due to climate, irrigation potentials and ultra-fertile soil. But marketing in the past has always been an expensive problem.

It might be a good policy for our government to turn over two or three hundred of our cheaper Liberty ships to the Chinese after the war, to be operated by Chinese crews with an American navigator and engineer to provide technical guidance. These ships could be easily air-conditioned to preserve apples and other hardy fruits for the journey to the Orient.

In this way, we would get rid of a

dangerous surplus of cheap ships, help the heroic Chinese, and provide a market for American products. True, the ships on the return voyage would have to bring back Asiatic products, and this calls for one of our greatest economic needs—an intelligent tariff policy.

Post-War Highway Bill

OF special interest to fruit growers is the post-war highway bill recently approved by the House Roads Committee and seemingly earmarked for early passage by Congress. The bill appropriates a billion and a half dollars for highway improvement to be spent at the rate of five hundred million dollars for each of the three successive post-war fiscal years.

The formula of apportionment of funds among the states is changed from the traditional Federal-aid method of 1/3 population, 1/3 area, and 1/3 post road mileage to a new basis of 1/2 population, 1/4 area and 1/4 post road mileage. This would give a larger percentage of federal funds to the more populous states for use in relieving urban traffic congestion.

While this arrangement is slightly less advantageous to farmers in general, it is not so for fruit growers. Urban areas are the great markets for fruit, much of which has to reach them promptly if the fruit grower is to profit to the maximum.

His stake in urban roads is as great as in rural.

The proposed matching basis for the first year is 60 percent federal funds to 40 percent state funds with the regular 50-50 matching basis applying thereafter.

The bill automatically carries an appropriation of one billion dollars which should be available by January 1st of next year. One and one-half percent of the funds apportioned to any state for any year may be used for surveys, plans, and engineering without matching with state funds. Growers should urge on Congress the desirability of prompt passage of this bill.

Beware of Subsidies

THE nation's fruit growers were given advice by Senator Byrd at the National Apple Institute meeting that they should never forget. Pleading for a free market for apples, Senator Byrd warned that any marketing system would mean quotas. Control if it comes, he predicted, would enter through the back door of subsidies, which he felt should be accepted only to ward off actual disaster. Never forget, he said, that if the government subsidizes it will control.

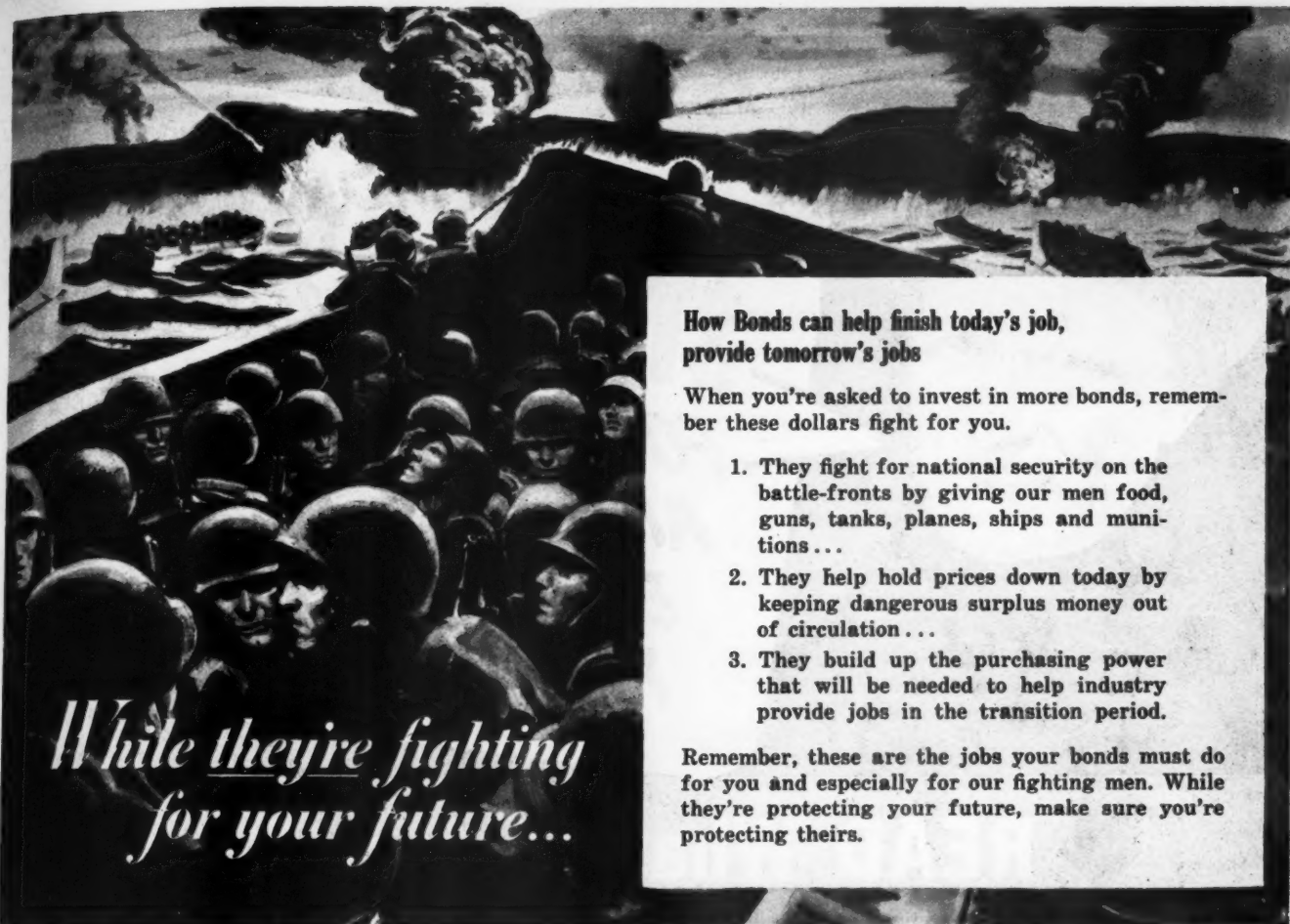
Fruit Growing As a Hobby

MUCH evidence is accumulating that fruit growing as a hobby is making rapid progress. While its expansion antedates the war, present emphasis on victory gardening has given it great impetus. Having learned to raise vegetables, dwellers in cities and small towns are anxious to master the more intricate and complex art of growing fruit. Foundation for the hobby is the dwarf tree, but the garden fruit grower by no means limits himself to these types. Although his motive is not profit, the hobby grower is raising some excellent fruit and promises to produce more of it.

While professional growers are inclined to look askance upon such effort, the hobby grower is by no means a detriment to the fruit growing industry. In a limited sense his efforts curtail the fruit market, but ultimately he contributes more to the industry than his limited competition takes away. The man who raises fruit becomes a connoisseur of fruit. He learns to like its vast variety of delicious flavors and to value properly its dietary benefits. The chances are that when he raises a little of a few kinds, he will buy more of the many he cannot grow.

It is from a horticultural viewpoint, however, that the amateur promises to make his greatest contribution to the industry. In the past, the hobby grower has been a minor factor in producing new varieties. But his modern prototype may do much better. Given the right kind of basic instruction, the hobby grower could astonish the world. Elsewhere in this issue, two of the country's leading horticulturists emphasize how slowly the fruit breeder must work and how limited are the mathematical chances favoring phenomenal discoveries. But by his painstaking efforts, the scientist has amassed the fundamental knowledge that the serious hobby grower can exploit.

Like the scientist, the hobby grower's efforts are not limited by the need to make a profit, and his numbers enhance his chances of making valuable discoveries. His efforts should meet every encouragement both from experiment stations and professional growers. Nurserymen should not take advantage of his gullibility by selling him unproven stock. If professionals will play fair with him, he may supply them with the counterpart of another Delicious apple, and much quicker than the sixty odd years that have elapsed since the Iowa farmer first observed that famed apple.



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FOR BETTER COLOR
AND SIZE... AND
EASE MY LABOR
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WHAT STAFAST WILL DO

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2. Cut down "spot picking."
3. Help solve labor problem.
4. Reduce pre-harvest drop and windfall losses to a minimum.
5. Improve color, size and value of crop.

*Reg. U. S. Pat. Off.

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